

## INDEX OF SUBJECTS.

### TRANSACTIONS, PROCEEDINGS, AND ABSTRACTS.

1911.

(Marked T., P., and A., i and A., ii respectively.)

#### A.

**Abietic acid**, isomeride of (BAKER and SMITH), A., i, 479.

**Absinthe**, detection of tanacetone in (ENZ ; PHILIPPE and v. FELLENBERG), A., ii, 1040.

**Absorption** from the peritoneal cavity (FISCHER), A., ii, 510.

and digestion (LONDON and RABINOWITSCH ; KRYM), A., ii, 999 ; (LONDON and DAGEEFF), A., ii, 1000 ; (LONDON and GABRILOWITSCH), A., ii, 1001.

and digestion, defects of (LONDON, DAGEEFF, STASSOFF, and HOLMBERG), A., ii, 998.

**Absorption spectra**. See under Photochemistry.

**Absorptive power**, influence of conjugated linkings on (CRYMBLE, STEWART, WRIGHT, and GLENDINNING), T., 451 ; P., 46 ; (CRYMBLE, STEWART, WRIGHT, and REA), T., 1262 ; P., 153.

**Acanthelin** (HESSE), A., i, 210.

**Acapnia** and glycosuria (HENDERSON and UNDERHILL), A., ii, 813.

**Accumulator**. See under Electrochemistry.

**Aceanthrenequinone** (LIEBERMANN and ZSUFFA), A., i, 203, 387.

**Aceanthrenetolazin** (LIEBERMANN and ZSUFFA), A., i, 203.

**Aceanthren-2-indole-indigotin**. See Indoxylaceanthrenone.

**Aceanthrene, dichloro-** (LIEBERMANN and ZSUFFA), A., i, 387.

**Aceanthren-2-thionaphthen-indigotin**. See Oxythionaphtheneylaceanthrenone.

**Acecaffine**. ? See 5-Methylamino-1:3-dimethylhydantoin.

**Acenaphthene**, oxidation of (KALLE & Co.), A., i, 309.

**Acenaphthene**, 2-amino-3-hydroxy-2-nitro-3-amino-, 2-nitro-3-hydroxy-, and their derivatives (SACHS and MOSEBACH), A., i, 960. nitro-, reduction of (CROMPTON and WALKER), P., 165.

**Acenaphthenoquinone**, preparation of (REISSERT), A., i, 729. derivatives of (AUWERS, DANNEHL, and BOENNECKE), A., i, 171.

**Acenaphthenone**, preparation of (BADSCHI ANILIN- & SODA-FABRIK), A., i, 464.

**2:3-Acenaphthylenediamine** (SACHS and MOSEBACH), A., i, 960.

**Acenaphthylene 3:4-thiocarbamide** (SACHS and MOSEBACH), A., i, 961.

**Acoperimidine** (SACHS and MOSEBACH), A., i, 961.

**Acetaldehyde**, formation of, from oxalates (GANASSINI and SCANDOLA), A., i, 421.

and ethyl alcohol, the system (DE LEEUW), A., ii, 870.

paracetaldehyde and metacetaldehyde, equilibrium in the system (SMITS and DE LEEUW), A., ii, 871.

new condensation products of (WEGSCHEIDER and SPÄTH), A., i, 113.

isomeric phenylhydrazones of (LAWS and SIDGWICK), T., 2085 ; P., 263.

influence of the vapour of, on the organism (IWANOFF), A., ii, 419.

estimation of, by means of pyrrole (SOBOLEWA and ZALEWSKI), A., ii, 76.

**Paraldehyde**, assay of (RICHTER), A., ii, 776.

**Acetaldehydediethylhydrazone** (WIELAND and FRESSEL), A., i, 495.

**Acetaldehyde-hydrazine** and its derivatives (STOLLÉ), A., i, 421.

**Acetamide**, preparation of (ROSANOFF, GULICK, and LARKIN), A., i, 529.

bromo-, potassium salt, interaction of oxamethane with (MAUGUIN), A., i, 358.

cyano-, preparation of (THOLE and THORPE), T., 429.

iodo-oximino- (STEINKOPF and JÜRGENS), A., i, 531.

**Acetamides**, substituted, acetylation of (FRANCHIMONT and DUBSKY), A., i, 529.

**Acetanilide**, detection of (WATSON), A., ii, 777.

**Acetanilide**, 3-chloro-2:4:6-tribromo- (KÖNIG), A., i, 485.

**Acetic acid**, purification of (ORTON, EDWARDS, and KING), T., 1178; P., 120.

purification and properties of (BOUSFIELD and LOWRY), T., 1432; P., 187.

distinction between glacial and anhydrous (KLEIN), A., ii, 340.

and its ethyl ester, ethyl alcohol and water, equilibrium between, and the influence of hydrochloric acid on the system (JONES and LAPWORTH), T., 1427; P., 143.

influence of salts on the distribution of, between water and ethyl ether (DE KOLOSSOVSKY), A., ii, 591.

influence of, on the growth of *Penicillium glaucum* (REICHEL), A., ii, 144.

haemolysis by (STADLER and KLEEMAN), A., ii, 996.

ammonium salt, use of, in the production of milk (MORGEN, BEYER, and WESTHAUSSEN), A., ii, 751.

basic chromic salt of (GUSSMANN), A., i, 103.

dysprosium salt of (JANTSCH and OHL), A., ii, 493.

potassium salt, hydrates of (ABE), A., i, 946.

acid sodium salts of (ABE), A., i, 599.

strontium salt, solubility and hydrates of (OSAKA and ABE), A., i, 599.

*p*-amino- and *p*-acetylamino-benzoyl-methyl esters of (KUNCKELL), A., i, 990.

2:6-dibromo-4-acetylamino-*m*-tolyl ester (RAIFORD), A., i, 993.

ethyl ester, preparation of (KURTENACHER and HABERMANN), A., i, 600.

*d*- $\beta$ -octyl ester of (PICKARD and KENYON), T., 66.

**Acetic acid**, detection and estimation of small quantities of acetic anhydride in (EDWARDS and ORTON), T., 1181; P., 121.

**Acetic acid**, bromo-, ethyl ester condensation of, with ethyl  $\beta\beta$ -dimethylglycidate (DARZENS and SEJOURNÉ), A., i, 420.

monobromo-, mono-, di-, and tri-chloro-, iodo-, and nitro-, menthyl esters of (COHEN), T., 1063.

chloro-, chloral derivative of (GABUTTI), A., i, 261.

ethyl ester, condensations with (WISLICENUS), A., i, 107.

action of hydrazine hydrate on (CURTIUS and HUSSONG), A., i, 400.

mono-, di-, and tri-chloro-, electrical conductivity of (MAMELI), A., ii, 459.

chloro-oximino-, and iodo-oximino-, ethyl ester (STEINKOPF and JÜRGENS), A., i, 530.

cyano-, ethyl ester, action of, on *o*- and *p*-hydroxybenzaldehyde (SCLAVI), A., i, 398.

iodo-, phenyl and thymol esters (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 630.

dinitro-, ethyl ester, properties of, and its salts (CURTISS and KOSTALEK), A., i, 518.

**Acetic anhydride**, behaviour of, at high temperatures (BAMBERGER), A., i, 103.

action of, on uranium nitrate (VANINO), A., ii, 898.

detection and estimation of small quantities of, in acetic acid (EDWARDS and ORTON), T., 1181; P., 121.

$\alpha$ -**Acetic-4-methyl-*o*-coumaric acid**, *m*-tolyl ester of (FRIES and VOLK), A., i, 204.

**Acetin**,  $\alpha$ -monobromo- (ALPERN and WEIZMANN), T., 84.

**Acetoacetic acid**, and its ethyl ester, derivatives of (AUWERS, DANNEHL, and BOENNECKE), A., i, 171.

brucine salt (HILDITCH), T., 234.

ethyl ester, tautomerism of (MEYER), A., i, 351, 833; (KNORR, ROTHE, and AVERBECK), A., i, 516; (MEYER and KAPPELMEIER), A., i, 832.

keto-enolic equilibrium of (HANTZSCH), A., i, 602.

sodium derivative, action of, on chlorides of dibasic fatty acids (SCHEIBER and LUNGWITZ), A., i, 836.

**Acetoacetic acid**,  $\gamma$ -chloro-, ethyl ester (LESPIEAU), A., i, 108.  
 $\alpha\gamma$ -dichloro-, ethyl ester, and its salts (WISLICENUS), A., i, 108.

**$\alpha$ '-Acetoacetin**,  $\alpha\beta$ -dichloro- (ALPERN and WEIZMANN), T., 86.

**$\alpha$ -Acetoacetylaminopyridine** (PALAZZO and TAMBURINI), A., i, 327.

**Acetobornyl-*p*-nitroanilide** (ULLMANN and SCHMID), A., i, 71.

**$\beta$ -Acetobromodextrose**, preparation of (FISCHER), A., i, 605.

**$\beta$ -Acetochlorodextrose**, preparation of (FISCHER), A., i, 605.

**Acetone**, electrochemistry of solutions in (ROSHDESTWENSKY and LEWIS), T., 2138; P., 266.  
 ethylation of (ZERNER), A., i, 950.  
 velocities of reaction of, with phenylhydrazine and with hydroxylamine (SCHÖTTLE), A., ii, 1079.  
 condensation of, in the presence of phosphoric acid (NEOGI), T., 1249; P., 71.  
 brucine sulphite (MAYER), A., i, 223.  
 estimation of, in animal fluids (SCOTT-WILSON), A., ii, 776.

**Acetone**, 1:3-diamino-, tetra-acetyl derivative of (FRANCHIMONT and DUBSKY), A., i, 528.  
 $\alpha$ -dichloro-, semicarbazones of (KNÖPFER), A., i, 1034.  
 dihydroxy-, as a product of alcoholic fermentation (KARAUSCHANOFF), A., ii, 914.  
 glycogenic property of (MOSTOWSKI), A., ii, 635.

**Acetone substances**, influence of fat on the excretion of (FORSSNER), A., ii, 135.  
 behaviour of, in carbohydrate metabolism (GEELMUYDEN), A., ii, 904.

**Acetonedicarboxylic acid**, brucine salt of (HILDITCH), T., 235.

**Acetone- $\alpha\gamma$ -diurethane**, ethyl ester and its derivatives (FRANCHIMONT and DUBSKY), A., i, 528.

**Acetonepinacone**, methyl ethers of (LINDNER), A., i, 523.

**Acetonitrile**, amino-, action of hydrogen sulphide on (JOHNSON and BURNHAM), A., i, 712.  
 chloro-oximino- (STEINKOPF and JÜRGENS), A., i, 530.  
 iodo-, reaction of with silver nitrate (LOY and ACREE), A., i, 360.

***N*-Acetonylanthranilic acid**, and its derivatives (HOUBEN, ARENDT, and ETTINGER), A., i, 129.

**1-Acetonylcyclohexene**, and its semicarbazone (DARZENS and ROST), A., i, 989.

**Acetonylmethylbutylcyclohexene**, and its semicarbazone (DARZENS and ROST), A., i, 989.

**Acetonyl-2-, 3-, and 4-methylcyclohexene** and their semicarbazones (DARZENS and ROST), A., i, 989.

**Acetonyl-*N*-methylstrychnic acid**, iodo- (KRAUZE), A., i, 1017.

**Acetonylstrychnic acid**, iodo, and its derivatives (KRAUZE), A., i, 1017.

**Acetonylstrychnine**, iodo-, and its salts (KRAUZE), A., i, 1017.

**Acetophenone**, bromination of (HAHN), A., i, 649.  
 compounds of aluminium halides with (MENSCHUTKIN), A., i, 65.  
 brucine sulphite (MAYER), A., i, 223.

**Acetophenone**, amino-, and  $\omega$ -amino-*p*-hydroxy-, halide salts of (MANNICH and HAHN), A., i, 648.  
 $\rho$ -amino- $\omega$ -hydroxy-,  $\omega$ -chloro-*p*-amino-,  $\omega$ -chloro- $\omega$ -, and *m*-bromo-*p*-amino-,  $\omega$ -chloro-*m*-nitro-*p*-amino-, and  $\omega$ -*m*-dichloro-*p*-amino-, and their derivatives, and  $\omega$ -chloro-2:5-dibromo-4-amino-, acetyl derivative (KUNKELL), A., i, 990.  
 $\omega$ -hydroxy-, and its derivatives (ANSCHÜTZ and SCHOLL), A., i, 316.  
 2:3:4:6-tetrahydroxy-, di-, tri-, and tetramethyl ethers of, and their derivatives (BARGELLINI and BINI), A., i, 212.

**Aceto-*m* toluidide**, 2:5-*di*-iodo-, (WHEELER and BRAUTLECHT), A., i, 27.

**5:6-*di*-iodo-, and 4:5:6-*tri*-iodo-** (WHEELER and HOFFMAN), A., i, 28.

**Aceto-*p* toluidide**, 2-chloro-5-nitro- (BLANKSMA), A., i, 39.

**Acetoveratrone**, *dibromide* of (HAHN), A., i, 649.

**Acetoveratrone**,  $\omega$ -amino-, hydrochloride, and  $\omega$ -bromo- (MANNICH and HAHN), A., i, 649.

**$\omega$ -Acetoxybenzaldehyde**, compound of, with tin tetrachloride (PFEIFFER, FRIEDMANN, GOLDBERG, PROS, and SCHWARZKOPF), A., i, 789.

**$\omega$ -Acetoxybenzoic anhydride** (EINHORN and SEUFFERT), A., i, 54.

***o*-2-Acetoxybenzoyloxybenzoic acid (acetylsalicyloylbenzoic acid)** (EINHORN, HAAS, v. BAGH, LADISCH, and ROTH-LAUF), A., i, 302.

**Acetoxybenzylideneaniline** and its hydrochloride (KUHARA and TODO), A., i, 214.

**6-*o*-Acetoxy-*cinnamamic acid*** (STOERMER, FRIDERICI, BRÄUTIGAM, and NECKEL), A., i, 296.

**6-Acetoxy-3:4-dimethyl- $\alpha$ -pyrone** (THOLE and THORIE), T., 2234.

**1-Acetoxyhydrindene** (WEISSGERBER and BREHME), A., i, 624.

**$\alpha$ -Acetoxymercurianilinoacetic acid**, ethyl ester (SCHOELLER, SCHRAUTH, and GOLDACKER), A., i, 699.

**$\alpha$ -Acetoxymercurianilinopropionic acid**, ethyl ester (SCHOELLER, SCHRAUTH, and GOLDACKER), A., i, 699.

**$\alpha$ -Acetoxymercuri- $\beta$ -isobutoxy- $\beta$ -phenylpropionic acid**, methyl ester and derivatives (SCHRAUTH, SCHOELLER, and STRUENSEE), A., i, 595.

**$\alpha$ -Acetoxymercuri- $\beta$ -ethoxy- $\beta$ -phenylpropionic acid**, methyl ester, and its derivatives (SCHRAUTH, SCHOELLER, and STRUENSEE), A., i, 595.

**$\alpha$ -Acetoxymercuri- $\beta$ -methoxy- $\beta$ -phenylpropionic acid**, benzyl and ethyl esters (SCHRAUTH, SCHOELLER, and STRUENSEE), A., i, 595.

**$\alpha$ -Acetoxymercuri- $\beta$ -propoxy- $\beta$ -phenylpropionic acid**, methyl ester, and its derivatives (SCHRAUTH, SCHOELLER, and STRUENSEE), A., i, 595.

**$\alpha$ -Acetoxymercuri- $\beta$ -isopropoxy- $\beta$ -phenylpropionic acid**, methyl ester, and derivatives (SCHRAUTH, SCHOELLER, and STRUENSEE), A., i, 595.

**4-Acetoxy-5-methoxy- $\beta$ -phenylpropionic acid**, 2-hydroxy-, lactone of (MOORE), T., 1048; P., 119.

**4-Acetoxy-1-methylcyclopentane-2-carboxylic acid**, ethyl ester (HOPE and PERKIN), T., 771.

**$\eta$ -Acetoxy- $\alpha$ -phenyl- $\eta$ -*p*-anisyl- $\Delta$  $\alpha$ -heptadien- $\epsilon$ -one**,  $\zeta$ -bromo- (BAUER and DIETERLE), A., i, 882.

**$\beta$ -Acetoxy- $\beta$ -phenyl *tert*-butyl ketone**, ethyl ester (BLAISE and HERMAN), A., i, 881.

**$\beta$ -Acetoxy- $\beta$ -phenylpivalyl chloride** and toluoxide (BLAISE and HERMAN), A., i, 881.

**3-Acetoxy-9-phenylxanthonium chloride** (POPE and HOWARD), T., 549.

**$p$ -Acetoxystyrene**,  $\omega$ -nitro- (REMFRY), T., 286; P., 21.

**2-Acetoxy-*m*-toluoyl chloride** (ANSCHÜTZ and SCHOLL), A., i, 316.

**Aceto-*m*-xylidide**, 5-chloro- (ORTON and KING), T., 1188.

**Acetyl chloride**, action of, on acetylbiuret (OSTROGOVICH), A., i, 1036.

**Acetyl chloride**, condensation of, with salicylamide (TITTERLEY and HICKS), T., 866; P., 102.

**fluoride**, *di*-bromo- (SWARTS), A., i, 762.

**Acetylacetone**, enolic forms of (KNORR and FISCHER), A., i, 977.

**thulium salt** (JAMES), A., ii, 892.

**zinc and cadmium salts of** (ROSENHEIM and GARFUNKEL), A., i, 620.

**Acetylacetonecarbamide**. See 4:6-Dimethyl-2-pyrimidone.

**Acetyl-*dl*- $\alpha$ -aminobutyric acid**, chloro- (ABDERHALDEN, CHANG, and WURM), A., i, 526.

**Acetylalaniline-2-sulphonic acid**, 4-bromo- and its derivatives (CLAASZ), A., i, 436.

**Acetylalanisole**, *p*-cyano- (BARGELLINI and FORLI-FORTI), A., i, 902.

**Acetylanthranil** (MAYER), A., i, 869.

**Acetylanthranylacetylhydrazide** (BOGERT, BELL, and AMEND), A., i, 162.

**Acetylanthranyl-*m*-aminotoluidide** (BOGERT, GORTNER, and AMEND), A., i, 581.

**Acetylauramine** and its derivatives (SEMPER), A., i, 579.

**Acetylbenzoic acid**, *p*-chloro-, and its nitrile (KUNCKELL), A., i, 991.

**Acetylbenzoin**, *p*-nitro- (FRANCIS and KEANE), T., 346; P., 44.

**1-Acetyl-4-benzylidenehydantoin**, 2-thio- (WHEELER, NICOLET, and JOHNSON), A., i, 1032.

**Acetylbiuret**, action of acetyl chloride on (OSTROGOVICH), A., i, 1036.

**Acetylbornyl-*p*-phenylenediamine** (ULLMANN and SCHMID), A., i, 71.

**Acetylcarbamide**, *dichloro*- (BORNWATER), A., i, 617.

*oximinocyan*- (MERCK), A., i, 167.

**Acetylcatechol**,  $\omega$ -chloro-, and  $w$ -iodo, diacetates (MANNICH and HAHN), A., i, 649.

**2-Acetyl-1:3-dihydroisoindole** (TIFFENEAU), A., i, 810.

**13-Acetyl-5:13-dihydroquindoline** and 5:10-*di*bromo- (FICHTER and ROHNER), A., i, 86.

**3-Acetyl-2:4-dimethylpyrrole**, hydrazone of (KNORR and HESS), A., i, 1020.

**Acetylene**, fusibility curve of, and methyl ether (BAUME and GERMAN), A., i, 830.

*di*-bromo-, synthesis of fumaric and maleic acids from (KEISER and McMaster), A., i, 948.

**Acetylene**, chloro-, preparation of (RODRIGUEZ MOURELO, and GARCIA BANUS), A., i, 414.

**Acetylene**, cyano-, preparation of (MOUREU and BONGRAND), A., i, 22.

cyano-, and *di*cyan-, toxicity of, and the antitoxic action of sodium thiosulphate towards the latter (DESGREZ), A., ii, 756.

*di*-iodo-, preparation of, and its compounds with organic bases (DEHN), A., i, 829.

**Acetylenes**, cyclic, preparation of (ANDRÉ), A., i, 277.

**Acetylenedicaraldehyde** (DUPONT), A., i, 804.

**Acetylenedibutyrone** (DUPONT), A., i, 804.

**Acetylenedicarboxylic acid**, menthyl esters of (HILDITCH), T., 223; P., 6.

**Acetylenedicrotonaldehyde** (DUPONT), A., i, 804.

**Acetylenedivaleraldehyde** (DUPONT), A., i, 804.

**Acetylgersemine** and its hydrochloride (MOORE), T., 1232; P., 157.

**Acetylglycine**, *iodo*- (ABDERHALDEN, HIRSCH, and GUGGENHEIM), A., i, 954.

**Acetylguanidine**, and *chloro*-, and *trichloro*- (TRAUBE), A., i, 115.

**Acetylhomopiperonylamine** (FARBENFARIKEN VORM. F. BAYER & Co.), A., i, 1015.

**Acetylhydantoic acid**, *thio*-, and its *ethyl* ester and potassium salt (WHEELER, NICOLET, and JOHNSON), A., i, 1032.

**3-Acetylindole**, phenylhydrazone of (ODDO and SESSA), A., i, 487.

**Acetylkino** (SIMONSEN), T., 1533.

**Acetylmethylicarbamide**, oximinocyanato (MERCK), A., i, 167.

**4-Acetyl-1-methylcyclohexane** and its derivatives (WALLACH and RITTER), A., i, 472.

**d-3-Acetyl-1-methylcyclohexan-3-ol**, semicarbazone of (HAWORTH, PERKIN, and WALLACH), T., 131.

**d-3-Acetyl-1-methyl- $\Delta^2$ cyclohexene** and its derivatives (HAWORTH, PERKIN, and WALLACH), T., 128.

**$\delta$ -Acetyl- $\delta$ -methylhexoic acid** and its derivatives (CROSSLEY and RENOUE), T., 1111; P., 137.

**1-Acetyl-4-methylhydantoic acid**, *thio*- (WHEELER, NICOLET, and JOHNSON), A., i, 1032.

**1-Acetyl-2-methylindole** and its salts (DIELS and KOLLISCH), A., i, 231.

**Acetylmorphine**, *chloro*- (WIELAND and KAPPELMEIER), A., i, 746.

**2-Acetyl- $\alpha$ -naphthol**. See  $\beta$ -Naphthyl methyl ketone, 1-hydroxy-.

**Acetyl nitromethylnorhemicinic anhydride** (WEGSCHEIDER and KLEMENC), A., i, 542.

**9-Acetylphenanthrene** and its derivatives (WILGERODT and ALBERT), A., i, 882.

**Acetylphenylglycinearsinic acid**, quinine ester of (OECHSLIN), A., i, 760.

**1-p-Acetylphenyl-2-methylbenzimidazole**, 4:7-*d*/nitro-6-hydroxy-, and its oxime and phenylhydrazone (MELDOLA and KUNTZEN), T., 44.

**Acetylpropylcarbamide** (MAUGUIN), A., i, 358.

**8-Acetyl-8-isopropylvaleric acid** and its semicarbazone (WALLACH and CHALLENGER), A., i, 472.

**Acetylpyrogallol**,  $\omega$ -chloro-, and  $\omega$ -*iodo*-, triacetates (MANNICH and HAHN), A., i, 649.

**Acetylpyrogallol trimethyl ether**, and *bromo*- (MANNICH and HAHN), A., i, 649.

**Acetylpyrotartaric acid**, methyl ester, action of magnesium organic compounds on (BARBIER and LOCQUIN), A., i, 708.

**7-Acetylquindolinium bromide** (FICHTER and ROHNER), A., i, 86.

**Acetylsalicylaldehyde**. See *o*-Acetoxybenzaldehyde.

**Acetalsalantol**, *chloro*- (FARBENFARIKEN VORM. F. BAYER & Co.), A., i, 137.

**Acetalsalicylic acid**. See *o*-2-Acetoxybenzoyloxybenzoic acid.

**4-Acetyltoluenesulphonylaminonanisole**, 3-nitro-, 2:3-, and 2:5-*d*/nitro- (REVERDIN and DE LUC), A., i, 38.

**4-Acetyltoluenesulphonylaminotoluene** (REVERDIN and DE LUC), A., i, 38.

**Acetyl-*m*-toluidine**, *m*-chloro- (KUNKELL), A., i, 991.

**Acetylveratrole**, *chloro*-, and *cyanato*- (BARGELLINI and FORLI-FORTI), A., i, 902.

**Acid**,  $C_7H_{10}O_6$ , and its silver salt, from picrotinic acid (ANGELICO), A., i, 1004.

$C_7H_{12}O_2$ , from oxidation of 1:1-dimethylcyclopentan-2-ol and its silver salt (KIJNER), A., i, 43.

$C_9H_{12}O_2$ , from condensation of crotonaldehyde and its barium salt (SMEDLEY), T., 1632.

$C_9H_{16}O_4$ , from oxidation of 1:1-diethyl- $\Delta^2$ cyclopentane (KIJNER and VOZNESENSKY), A., i, 968.

$C_{10}H_{14}O_2$ , and its sodium salt from bromoisocamphenilanic acid (HENDERSON and HEILBRON), T. 1894; P., 249.

**Acid**,  $C_{10}H_{20}O_2$ , from oxidation of  $\alpha$ -phytol, and its derivatives (WILLSTÄTTER, MEYER, and HÜNI), A., i, 149.

$C_{11}H_{10}O_5$ , from oxidation of ethyl  $\alpha$ -cyanocinnamylideneacetate (REIMER), A., i, 448.

$C_{11}H_9O_5N$ , and its salts, from tribromo- $\beta$ -phthaliminoethylene (GABRIEL), A., i, 982.

$C_{11}H_{12}O_7$ , and its silver salt, from picrotin (ANGELICO), A., i, 1004.

$C_{12}H_{14}O_4$ , from oxidation of curcumone (RUPE and STEINBACH), A., i, 69.

$C_{12}H_{16}O_3$ , from oxidation of curcumone (RUPE and STEINBACH), A., i, 69.

$C_{12}H_{20}O_2$ , from linalyl bromide and ethyl sodiomalonate, and its ethyl ester (ROURE-BERTRAND FILS, DUPONT and LABAUNE), A., i, 895.

$C_{12}H_{22}O_3$ , from the oxidation of 1-methyl-4-isopropyl-3-allylcyclohexan-3-ol, and its salts (SAYTZEFF), A., i, 474.

$C_{13}H_{16}O_7$ , from ethyl camphorylideneecyanoacetate and hydrogen peroxide (FORSTER and WITHERS), P., 327.

$C_{13}H_{24}O_2$ , from dimethylallylhydrovalactone and magnesium methyl iodide (LOSANITSCH), A., i, 804.

$C_{13}H_9O_2N$ , from iodomagnesium derivative of carbazole (ODDO), A., i, 488.

$C_{13}H_{11}O_2N$ , from iodomagnesium derivative of diphenylamine and its salts (ODDO), A., i, 489.

$C_{13}H_{17}O_6N(+H_2O)$ , from ethyl camphorylideneecyanoacetate and hydrogen peroxide (FORSTER and WITHERS), P., 327.

$C_{14}H_{16}O_6$ , from picrotin (ANGELICO), A., i, 1004.

$C_{14}H_{28}O_2$ , from oxidation of  $\alpha$ -phytol, and its silver salt (WILLSTÄTTER, MEYER, and HÜNI), A., i, 149.

$C_{15}H_{16}O_{10}$ , product from the preparation of ethyl phloroglucinoldicarboxylate (LEUCHS and SIMION), A., i, 646.

$C_{17}H_{28}O_2$ , from cod-liver oil (HEIDSCHKA and RHEINBERGER), A., i, 766.

$C_{18}H_{16}O_4$ , and its methyl ester from oxidation of ethyl  $\alpha$ -cyanocinnamylideneacetate (REIMER), A., i, 448.

$C_{18}H_{18}O_4$ , from phenylpropionic acid and benzophenone (PATERNÒ and CHIEFFI), A., i, 65.

$C_{18}H_{17}O_{12}N$ , from the preparation of nitrogallic acid trimethyl ether (HARDING), T., 1595.

**Acid**,  $C_{19}H_{22}O_6N_2$ , from cacothelin, and its salts (CIUSA and SCAGLIARINI), A., i, 155.

$C_{21}H_{40}O_4$ , from oleic or elaidic acid and formaldehyde, and its derivatives (FOKIN), A., i, 765.

$C_{23}H_{40}O_5$ , from oleic or elaidic acid and formaldehyde, and its acetyl derivative (FOKIN), A., i, 765.

$C_{28}H_{22}O_5$ , from  $\delta\delta$ -diphenyl- $\alpha$ -styrylfulgic acid (STOBBE, BENARY, and SEYDEL), A., i, 380.

$C_{29}H_{40}O_7$ , from oxidation of digitogenic acid, and its magnesium salt (KILIANI), A., i, 139.

$C_{27}H_{25}O_3N$ , from phenylmethylketen-quinoline (STAUDINGER and RUCKZICKA), A., i, 464.

$C_{28}H_{42}O_{11}$ , from oxidation of digitogenic acid, and its barium salt (KILIANI), A., i, 139.

**Acids**, relation between the strength of, and their catalytic activity (RABE and McMILLAN), A., ii, 33.

activity of, as catalysts (DAWSON), T., 1.

hydrolytic activities of (WORLEY), T., 349.

solubility of salts in the corresponding (MASSON), T., 1132; P., 125.

adsorption of, by sheep's wool (v. GEORGIEVICS and POLLAK), A., ii, 1070.

standardisation of, by sodium phosphate (PRIDEAUX), A., ii, 1129.

action of, with benzophenone (PATERNÒ and CHIEFFI), A., i, 65.

excretion of (HENDERSON), A., ii, 752.

antagonism of the toxic action of, by salts (LOEB and WASTENEYS), A., ii, 755.

action of weak, on the blood-vessels (SCHWARZ and LEMBERGER), A., ii, 809.

fixation of, by proteins (RINGER), A., i, 406.

in soil (SCHREINER and SHOREY), A., ii, 147; (HALL and MILLER), A., ii, 429.

acyclic unsaturated, reduction of (WALLACH), A., i, 472.

aromatic, catalytic esterification of (SENDERENS and ABOULENC), A., i, 637.

carboxylic, preparation of secondary amines from (LE SUEUR), T., 827; P., 104.

degradation of, in the body (FRIEDMANN), A., ii, 910.

dibasic, catalytic esterification of (SENDERENS and ABOULENC), A., ii, 1080.

**Acids**, dicarboxylic, action of magnesium organic compounds on anhydrides of (BAUER : BAUER and WÖLZ), A., i, 871.  
 fatty, from cochineal (HUEURRE), A., i, 766.  
 in cod-liver oil (HEIDUSCHKA and RHEINBERGER), A., i, 766.  
 latent heat of fusion and specific heat of (MASSOL and FAUCON), A., ii, 853.  
 electrolysis of solutions of salts of, in the corresponding acids (HOFF-GARTNER), A., ii, 849.  
 haemolytic power of (SHIMAZONO), A., i, 765.  
 compounds of, with cholesterol (PARENTINGTON), T., 313 ; P., 14.  
 halogen derivatives of, rotation of the methyl esters of the (COHEN), T., 1058 ; P., 123.  
 formation of formic acid in the katabolism of (DAKIN and WAKEMAN), A., ii, 623.  
 ratio of, to unsaponifiable substances in the organism (COSTANTINO), A., ii, 627.  
 estimation of (SIMMICH), A., ii, 233.  
 estimation of, in fats, in presence of soaps (HOLDE and MARCUSSON), A., ii, 1037.  
 bromo-substituted, interaction of esters of, with silver nitrate in alcoholic solution (SENTER), T., 95.  
 $\alpha$ -bromo-, methyl esters of (CHRISTOPHER and HILDITCH), P., 312.  
 dibasic, action of the chlorides of, on ethyl sodioacetacetate (SCHEIBER and LUNGWITZ), A., i, 836.  
 fatty saturated, catalytic preparation of esters of (SENDERENS and ABOULENC), A., i, 600.  
 unsaturated, reactions of, with formaldehyde (FOKIN), A., i, 765.  
 fatty, volatile, estimation of (EFFRONT), A., ii, 547.  
 estimation of, in faeces (MCCAUGHEY), A., ii, 666 ; (EDELSTEIN and WELDE), A., ii, 827.  
 higher fatty, optically active derivatives of (HILDITCH), P., 311.  
 ammonium salts and separation of the (FALCIOLA), A., i, 5. 174.  
 preparation of ketones of (EASTERFIELD and TAYLOR), T., 2298 ; P., 279.  
 acetylenic, oxidation of (ARNAUD and HASENPRATZ), A., i, 515.  
 mineral, cryoscopy of (CORNEC), A., ii, 853.  
**Acids**, mineral, ingestion of, by the dog (LABBÉ and VIOILLE), A., ii, 220.  
 monobasic, from reducing sugars, action of the Bulgarian ferment on (BERTRAND and VEILLON), A., ii, 221.  
 organic, photolysis of, by ultra-violet light (BERTHELOT and GAUD-ECHON), A., ii, 170.  
 conductivity and dissociation of (WIGHTMAN and JONES), A., ii, 689.  
 classification of, according to valency (FALK), A., ii, 711.  
 influence of the structure of, on the stability of their carboxyl group (RAIKOFF and TISCHKOFF), A., i, 445.  
 containing alcoholic hydroxyl groups, basicity of (CALCAGNI and BERNARDINI), A., ii, 1078.  
 interchange of alkyl groups in esters of (PFANNL), A., i, 783.  
 preparation of esters of (ADMINISTRATION DER MINEN VON BUCHSWEILER AKT. GES.), A., i, 601.  
 oxidation of, by nitric acid in sunlight (BENRATH), A., ii, 835.  
 behaviour of mould fungi towards (HERZOG and RIPKE ; HERZOG, RIPKE, and SALADIN), A., ii, 915.  
 action of, with phosphoric acid (RAIKOFF and TISCHKOFF), A., i, 445.  
 action of, on sodium formate (OECHSNER DE CONINCK), A., i, 764.  
 compounds of metallic salts of, with ammonia, pyridine and phenylhydrazine (GROSSMANN and JÄGER), A., i, 944.  
 separation of mixtures of, by partial esterification (SUDBROUGH and THOMAS), T., 2307 ; P., 279.  
 saturated, esterification of (THOMAS and SUDBROUGH), P., 314.  
 standard, for use in acidimetry (KASTLE), A., ii, 66.  
 unsaturated, esterification of (THOMAS and SUDBROUGH), P., 314.  
 compounds of, with aldehydes, ketones and formic acid (FARBWERKE VORM. MEISTER, LUCIUS & BRÜNING), A., i, 107.  
 volatile, estimation of, in wines (WINDISCH and ROETGEN), A., ii, 942 ; (VERDA), A., ii, 1037.  
 detection of, microscopically (KANTOR and GIES), A., ii, 446.  
 estimation of, iodometrically (KOEFOED), A., ii, 67.  
 estimation of, in tan liquors (PROCTER and SEYMOUR-JONES), A., ii, 76.

**Acids.** See also  $\alpha$ -Aminino-fatty acids, Hetero- and Iso-polyacids.

**Acid amides.** See Amides.

**Acid chlorides**, compounds of aluminium chloride and bromide with (MEN-SCHUTKIN), A., i, 45.

action of, on the sodium derivative of phenylacetonitrile (BODROUX), A., i, 545.

**Acid esters.** See Esters, acid.

**Acidity**, measurement of, by potentials, in liquids containing carbon dioxide (HASSELBALCH), A., ii, 182.

**Acidosis**, action of chemical substances on (BAER and BLUM), A., ii, 512.

**Aconitine**, action of, on the isolated frog's heart and on nerves (HARTUNG), A., ii, 1016.

estimation of (RIBAUT), A., ii, 551.

**Acraldehyde**, presence of, in bitter wines (VOISENET), A., ii, 1127.

enzyme producing, in bitter wines (VOISENET), A., ii, 915.

influence of the vapour of, on the organism (IWANOFF), A., ii, 419.

**Acridine**, pyridine and quinoline salts, chromoisomerism of (HANTZSCH), A., i, 673.

3:6-diamino- (CASSELLA & Co.), A., i, 504.

**Acrylic acids**,  $\alpha$ -cyano-, preparation of derivatives of (CLARKE and FRANCIS), A., i, 295.

**Actinium**,  $\gamma$  rays of (RUSSELL and SODDY), A., ii, 88.

emanation, transformation of the (GEIGER), A., ii, 683.

separation of, from residues (BOLTWOOD), A., ii, 359.

extraction of, from radium residues (v. WELSBACK), A., ii, 7.

**Actinium-C**, half-period of (KOVÁŘIK), A., ii, 173.

**Acyl cyanides**, formation of (VOR-LÄNDER, FRIEDBERG, VAN DER MERVE, ROSENTHAL, HUTH, and v. BODECKER), A., i, 865.

**Acylanilides**, chlorination of (KING and ORTON), T., 1377; P., 196.

**Acylguanidines**, aromatic, preparation of (PIERRON), A., i, 166.

$\alpha$ -**Acylhydrazines**, properties of (FRANZEN and KRAFT), A., i, 816.

**Adaline** ( $\alpha$ -bromo- $\alpha$ -ethylbutyrylcarbamide), pharmacology of (FILIPPI), A., ii, 1120.

**Adaline**,  $\alpha$ -bromo- (FARBENFABRIKEN VORM F. BAYER & Co.), A., i, 118.

**Address**, commemorative, to the Royal Academy of Sciences of Turin, P., 272.

**Address**, congratulatory, to King George V, P., 184.

to the University of St. Andrews, P., 185.

presidential (DIXON), T., 588.

**Adenine**, recovery of (BARNETT and JONES), A., i, 403.

**Adipic acid** -bisphenylhydrazide (SCHEIBER and LUNGWITZ), A., i, 836.

**Adipyldiacetoacetic acid**, ethyl ester (SCHEIBER and LUNGWITZ), A., i, 836.

**Adrenaline**, formation of, in the animal body (FUNK), A., ii, 907.

mechanism of the action of (LICHTWITZ), A., ii, 754.

inactivation of (CRAMER), A., ii, 754.

production of diabetes by, and its inhibition by urethane narcosis (UNDERHILL), A., ii, 312.

production of glycosuria by, in thyroidectomy (UNDERHILL), A., ii, 137.

physiological activity and constitution of (HAROLD, NIERENSTEIN, and ROAF), A., ii, 136.

chemical toxicology of (VENTUROLI and GALLERANI), A., ii, 635.

influence of, on muscular activity (RADWANSKA), A., ii, 312.

effect of oxidation and salts of the blood on the action of (SIEGEL), A., ii, 312.

**Adrenaline immunity** (WATERMAN), A., ii, 1016.

**Adsorption** (RAKOWSKI), A., ii, 470, 471, anomalous (BAYLISS), A., ii, 99; (LOTTERMOSER), A., ii, 969.

relation between ionisation and (OSTWALD), A., ii, 1068.

experiments on (ESTRUP), A., ii, 20; (LEVITE), A., ii, 858; (PRATOLONGO), A., ii, 1069.

of salts (LACHS and MICHAELIS), A., ii, 190; (SCHERINGA), A., ii, 191.

in solution (v. GEORGIEVICS and POLLAK), A., ii, 1070.

of substances by charcoal (FREUNDLICH and MASIUS), A., ii, 374.

**Aegirite** from Quincy pegmatite (PALACHE and WARREN), A., ii, 615.

**AFFINITY, CHEMICAL** :—

**Affinity**, influence of, in solutions (RÓZSA), A., ii, 1073.

chemical (BRÖNSTED), A., ii, 856.

**Chemical equilibrium** in reversible reactions (MICHAEL and LEUPOLD), A., i, 250.

of carbon monoxide with carbon dioxide and carbon (RHEAD and WHEELER), T., 1140; P., 126.

**AFFINITY, CHEMICAL:—**

**Kinetics**, chemical, integrals of (JÜTTNER), A., ii, 972.  
of irreversible reactions (MARCEL-LIN), A., ii, 27.  
of the transformations of chloro-alkylamines into heterocyclic compounds (FREUNDLICH and KRESTOVNIKOFF), A., ii, 266.  
of the reaction of bromine with formic acid (JOSEPH), A., ii, 384.  
of the action of hydrogen on solutions of potassium permanganate (JUST and KAUKO), A., ii, 494.  
of the formation of oxonium dibromides in organic solvents (TSCHELINZEFF and KONOWALOFF), A., ii, 706.

**Kinetic theory** of gases in relation to thermodynamics (BERTHOUD), A., ii, 578.

**Reactivity**, relation between and chemical constitution of nitrogen compounds (CLARKE), T., 1927; P., 243.

**Chemical action and ionisation** (BLOCH), A., ii, 357, 456.

**Equilibrium constant**, influence of the solvent on the (PISSARJEWSKY and SHAPOVALENKO), A., ii, 11; (PISSARJEWSKY and LITVIN), A., ii, 12.

calculation of, from cryoscopic measurements (GOEBEL), A., ii, 1078.

**Catalysis** (BÖESEKEN and LANGEZAAL), A., ii, 22; (BÖESEKEN), A., ii, 384.

in a homogeneous system (MÜLLER), A., ii, 266.

application of the kinetic theory to (DUCLAUX), A., ii, 479.

by acids (DAWSON), T., 1.

dehydrogenation by (ZELINSKY), A., i, 958.

esterification by (SABATIER and MAILHE), A., i, 258, 416.

simultaneous oxidation and reduction by (ZELINSKY and GLINKA), A., i, 870.

reduction by, in a vacuum (ZELINSKY), A., i, 988.

reduction and oxidation of organic compounds by (SABATIER), A., i, 702.

negative, mechanism of (SENTER and PORTER), T., 1049; P., 119.

**Catalytic reactions** at high temperatures and pressures (IPATIEFF), A., i, 25, 31, 137; (IPATIEFF and DOWGELEWITSCH), A., i, 937.

C. ii.

**AFFINITY, CHEMICAL:—**

**Dissociation pressure** of hydrated salts, determination of (PATERINGTON), T., 466; P., 45.

**Hydrolysis**, dilatometric investigations of (GALEOTTI), A., ii, 257.

**Velocity of addition** of bromine to imides (PIUTTI and CALCAGNI), A., i, 124.

of alkyl bromides to cyclic tertiary bases (LONG), T., 2164; P., 283.

**Velocity of crystallisation** (WAGNER; MARC), A., ii, 265.

dependence of, on temperature (TAMMANN), A., ii, 376.

**Velocity of hydrolysis** and viscosity, relation between (GRUMELL), A., ii, 197.

**Velocity of chemical reaction**, temperature coefficient of (TRAUTZ), A., ii, 381.

**Velocity of propagation of chemical reaction** (SREBNITSKY), A., ii, 872.

**Velocity of racemisation** (HERZ), A., ii, 974.

**Velocity of reaction** in heterogeneous systems (BOSELLI), A., ii, 196, 265. measurement of, by means of viscosity (DUNSTAN and MUSSELL), T., 565; P., 59.

influence of neutral salts on (POMA), A., ii, 707.

influence of neutral solvents on (PATTERSON and MONTGOMERIE), P., 276.

of metals with dissolved iodine (VAN NAME and BOSWORTH), A., ii, 973.

**Velocity of the ring opening** in unsaturated systems (BÖESEKEN and SCHWEIZER), A., ii, 197.

**Velocity of solution** of metallic copper in aqueous ammonia (YAMASAKI), A., ii, 383.

**Periodic reactions** (HIRNIAK), A., ii, 196.

**Agglutinins**, vegetable (ASSMANN), A., ii, 126.

**Agriculture**, colloids in relation to (RAMANN), A., ii, 529. use of sewage in (MÜNTZ and LAINÉ), A., ii, 764.

**Air.** See Atmospheric air.

**Alanine**, oxidation of (DENIS), A., i, 773.

complex chromium salt of (TSCHUGAEFF and SERBIN), A., i, 116.

**dl-Alaninedithiocarboxylic acid**, benzyl hydrogen ester of (SIEGFRIED and WEIDENHAUPT), A., i, 116.

**Albumin** in plant cells (LOEW and BOKORNY), A., ii, 324.

87

**Albumin**, isoelectric point of (MICHAELIS and DAVIDSOHN), A., i, 697.  
cause of separation of, in beer (EMSLANDER), A., i, 935.  
inner anhydride reaction of (BARDACH), A., ii, 945.  
iodo-, hydrolysis of (OSWALD), A., i, 697.  
detection of, by Heller's test (MICHEL), A. ii, 347.  
detection of, microscopically (BOKORNY), A., ii, 236.  
estimation of, gravimetrically in urine (SIMONOT), A., ii, 945.  
 $\alpha$ - and  $\beta$ -**Alcaptochromes** (MÖRNER), A., i, 56.

**Alcaptonuria**, chemical nature of (DAKIN; WAKEMAN and DAKIN), A., ii, 416.

**Alcohol**. See Ethyl alcohol.

**Alcohol**,  $C_6H_{16}O$ , from reduction of ester  $C_9H_{18}O_2$  (PETROFF), A., i, 974.  
 $C_9H_{18}O$ , and its acid phthalate, from oxidation of camphene (HENDERSON and SUTHERLAND), T., 1549; P., 212.  
 $C_{12}H_{20}O$ , from carvone and magnesium ethyl iodide (VANIN), A., i, 474.  
 $C_{12}H_{22}O$ , from linalyl bromide and ethyl sodiomalonate and its derivatives (ROURE-BERTRAND FILS, DUPONT, and LABAUNE), A., i, 895.  
 $C_{13}H_{26}O_3$  from oxidation of 1-methyl-4-isopropyl-3-allylcyclohexan-3-ol (SAYTZEFF), A., i, 474.

**Alcohols**, absorption of heat on mixing (DOROSCHEWSKY), A., ii, 468.  
partial pressures in mixtures of, and water (DOROSCHEWSKY), A., ii, 1062.  
of the hydroaromatic and terpene series (FICKARD and LITTLEBURY), P., 324.  
of the diphenyl- and triphenylmethane series, reduction of (TSCHITSCHIBABIN), A., i, 277.  
of the cyclohexane series, synthesis of (MAILHE and MURAT), A., i, 126.  
action of thionyl chloride on, in presence of a tertiary base (DARZENS), A., i, 513.  
compounds of, with ethyl metaphosphate (LANGHELD), A., i, 706.  
action of, on green plants and on bacteria (BOKORNY), A., ii, 522.  
acetylenic, preparation of (LESPIEAU), A., i, 347.  
aminoaryl, preparation of (EMDE and RUNNE), A., i, 718.  
aromatic and hydroaromatic containing the allyl group, synthesis of (MATSCHUREVITSCH), A., i, 961.

**Alcohols**, cyclic, catalytic dehydration of (IPATIEFF), A., i, 25.  
higher fatty, optically active derivatives of (HILDITCH), P., 311.  
olefinic, preparation of (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 598.  
polyhydric, phosphoric acid esters of (CARRÉ), A., i, 263.  
primary and secondary, preparation of bromides from (TABOURY), A., i, 173.  
secondary, of the fatty series, rotation of (PICKARD and KENYON), T., 45.  
unsaturated cyclic, reduction of (WALLACH), A., i, 470.

**Aldehyde** diacetates, preparation of (WOHL and MAAG), A., i, 13.

**Aldehydes**, explanation of the reactions of, by polarity (DERICK), A., ii, 712.  
action of, with hydrogen persulphide (BLOCH, HÖHN, and BUGGE), A., i, 46; (BUGGE and BLOCH), A., i, 60.  
action of hydrazine on (STAUDINGER and KUPFER), A., i, 751.  
compounds of, with unsaturated acids (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), A., i, 107.  
oxidation of, in alkaline solution (HEIMROD and LEVENE), A., i, 13.  
aromatic, electrolytic reduction of (LAW), T., 1113; P., 138.  
condensation of, with nitromethane (REMFRY), T., 282; P., 20.  
colour reactions of, applied to analysis of spirits (V. FELLENBERG), A., ii, 667.  
mixed, action of, with hydrazobenzene (RASSOW and BURMEISTER), A., i, 820.  
phenolic (PAULY and V. BUTTLAR), A., i, 785; (PAULY, SCHÜBEL, and LOCKEMANN), A., i, 787.  
Angeli-Rimini reaction for (BALBIANO), A., i, 987.

**Aldehydes**, nitro-, conversion of, into cyanoaldehydes (PONZIO), A., i, 920.

**2-Aldehydodiphenylquinomethane** (BISTRZYCKI and FELLMANN), A., i, 134.

**4-Aldehydo-2(or 3)-methylphenylacetic acid**, ethyl ester and semicarbazones (AUWERS), A., i, 298.

**6-Aldehydo-*n*-nonoic acid**, methyl ester and its semicarbazone (HARDING, WALSH, and WEIZMANN), T., 451.

**3-Aldehydosalicylic acid**, ethyl ester and phenylhydrazone, and 5-nitro- (REMFRY), T., 286; P., 21.

**5-Aldehydosalicylic acid** and its ethyl ester, and their phenylhydrazones, and 3-nitro-, and its ethyl ester (REMFRY), T., 286; P., 21.

**3-Aldehydotriphenylcarbinol**, 4-hydroxy-, derivatives of (BISTRZYCKI and FELLMANN), A., i, 133.

**3-Aldehydotriphenylacetic acid**, 4-hydroxy-, salts and derivatives of (BISTRZYCKI and FELLMANN), A., i, 133.

**Aldol**, derivatives of (WEGSCHEIDER and SPÄTH), A., i, 112.

**Aldoximes**, *N*-alkylated, preparation of (SCHEIBER), A., i, 382.

**syn-Aldoximes**, preparation of (DUNSTAN and THOLE), P., 233.

**Algae**, action of strontium salts on (LOEW), A., ii, 322.

marine, arsenic in (TASSILLY and LEROIDE), A., ii, 142.

**Alicyclic compounds**, reduction of (WALLACH), A., i, 469.

**Alizarin**, occurrence of, in rhubarb (MÜLLER), T., 967; P., 101.

**Alkali carbonates**, estimation of, volumetrically, in presence of alkali hydroxides and bicarbonates (TILLMANS and HEUBLEIN), A., ii, 658.

hydrogen carbonates, the dissociation pressures of (CAVEN and SAND), T., 1359; P., 147.

cyanide, estimation of sulphides in (ROSSITER), A., ii, 654.

fluorides, hydrofluorides of (DE FORCRAND), A., ii, 583.

halogen salts, changes in volume on solution in water of the (BAXTER), A., ii, 589.

manufacture, electrode potentials in (SACERDOTI), A., ii, 789.

metals, preparation of (HACKSPILL), A., ii, 602.

emission spectra of the, in the glow discharge (GEHLHOFF), A., ii, 83.

fluorescence of the vapours of (DUNOYER), A., ii, 832.

dispersion of light by vapours of the (BEVAN), A., ii, 349.

radiations of the (HENRIOT), A., ii, 354.

electrical properties of (BRONIEWSKI and HACKSPILL), A., ii, 1055.

velocity of ions of salts of, in flames (WILSON), A., ii, 572.

production of negative electrons by the (FREDENHAGEN), A., ii, 571.

positive ions emitted by salts of the (RICHARDSON), A., ii, 9, 10.

conduction of electricity in the vapour of the (FÜCHTBAUER), A., ii, 361.

variation in the physical constants of, on fusion (HACKSPILL), A., ii, 185.

**Alkali metals**, refractive indices of the halogen salts of the (BAXTER, BOYLSTON, MUELLER, BLACK, and GOODE), A., ii, 557.

thermochromy of compounds of the (DE FORCRAND), A., ii, 96.

colloidal, photoelectric effects of (POHL and PRINGSHEIM), A., ii, 363.

action of, on water (HACKSPILL and BOSSUET), A., ii, 392.

excretion of, in purine diuresis (BOCK), A., ii, 631.

nitrates, equilibrium in ternary systems of (MENZIES and DUTT), A., ii, 882.

phosphate in meat juice (SALKOWSKI), A., ii, 39.

sulphates, formation of double salts by the (FOOTE), A., ii, 393.

double salts of, with sparingly soluble sulphates (BARRE), A., ii, 979.

**Alkalies** in soil (HALL and MILLER), A., ii, 429.

action of chlorine on (TAYLOR), T., 1906; P., 243.

estimation of, in blood (BERNHARDT), A., ii, 1031.

**Alkaline earth carbonates**, carbon dioxide and water, equilibrium between (McCoy and SMITH), A., ii, 380.

caseinogenates, conductivity of (ROBERTSON), A., ii, 460.

globulinates, dissociation in solution of (ROBERTSON), A., i, 406.

metals, thermochromy of compounds of the (DE FORCRAND), A., ii, 96.

antagonism of salts of, to potassium poisoning (LOEB and WASTENEYS), A., ii, 637.

replacement of, in neuro-muscular mechanisms (MINES), A., ii, 413.

periodides and perbromides of the (HERZ and BULLA), A., ii, 801.

sulphides, phosphorescence of the (RAMSAUER, HAUSSER, and OEDER), A., ii, 238; (PAULI), A., ii, 351.

**Alkaline earths**, compounds of ammonium citrate with (QUARTAROLI), A., ii, 489.

**Alkaloid**,  $C_{36}H_{69}O_6N$ , from sterilised milk (AWERKIEFF), A., ii, 752.

**Alkaloids**, hydrogenation of (SKITA and FRANCK), A., i, 1017.

formation of periodides of (HOLMES), A., i, 907.

solubility of, in a mixture of boric acid and glycerol (BARONI and BORLINETTO), A., i, 903.

angostura. See *Angostura alkaloids*.

cinchona. See *Cinchona alkaloids*.

corydalis. See *Corydalis alkaloids*.

**Alkaloids**, ipecacuanha. See Ipecacuanha alkaloids.  
 morphine. See Morphine alkaloids.  
 opium. See Opium alkaloids.  
 of Pareira root. See Pareira root.  
 quinine. See Quinine alkaloids.  
 from isoquinoline. See isoQuinoline.  
 Senecio. See Senecio alkaloids.  
 from strychnos. See Strychnos.  
 genesis of, in plants (CIAMICIAN and RAVENNA), A., ii, 761.  
 in the seed of *Datura metel* (SCHMIDT), A., ii, 143.  
 of the *Papaveraceae* (GADAMER), A., i, 317.  
 of *Zygadenus intermedium*, physiological effects of (MITCHELL and SMITH), A., ii, 911.  
 neutralisation of, by extracts of the testis and epididymis (METALNIKOFF), A., ii, 217.  
 distinction between the (KLEIN), A., ii, 341.  
 estimation of, in cinchona bark (VIGNERON), A., ii, 234.  
**Alkyl** bromides, preparation of, from alcohols (TABOURY), A., i, 173.  
 course of the intramolecular transformations of (MICHAEL and LEUPOLD), A., i, 250.  
 velocity of addition of, to cyclic tertiary bases (LONG), T., 2164; P., 283.  
 halides, action of, on acid anhydrides (VANIN), A., i, 416.  
 halogen derivatives, preparation of (v. BRAUN and SOBECKI), A., i, 597.  
 iodides, action of copper oxide on (DENHAM), A., ii, 804.  
 sulphates, metallic, hydrolysis of (DRUSHEL and LINHART), A., ii, 707.  
**Alkylamines**, estimation of, in urine (ERDMANN), A., ii, 551.  
 chloro-, kinetics of the transformation of, into heterocyclic compounds (FREUNDLICH and KRESTOVNIKOFF), A., ii, 266.  
**Alkylaminodithiocarbamic acids**, salts and esters of (FOURNEAU), A., i, 528.  
**Alkylammonium** nitrites (RÂY and RAKSHIT), P., 71, 264, 291.  
**Alkylanthraquinones**, preparation of (SEER), A., i, 386.  
**Alkylglyoxalines**, amino- (PYMAN), T., 2172; P., 275.  
**Alkyl** groups, interchange of, in acid esters (KOMNENOS), A., i, 260.  
 $\omega$ - $p$ -**Alkylhydroxyphenylethylamines**, preparation of (AKTIEN-GESELLSCHAFT FÜR ANILIN-FABRIKATION), A., i, 857.

**Alkylidenehydrazines**, catalytic decomposition of, as a method of preparation of hydrocarbons (KIJNER), A., i, 679, 1027; (KIJNER and ZAVADOVSKY), A., i, 1028.  
**Alkylidene-urethanes**, reaction between  $\beta$ -dicarboxylic compounds and (BIANCHI and SCHIFF), A., i, 977.  
**Alkyloxides**, preparation of (CHABLAY), A., i, 939.  
 action of hydrogen sulphide on metallic (RULE), T., 558; P., 60.  
 **$\alpha$ -Alkyloxy-acids**, synthesis of, from ethyl chloroethoxyacetic acid (BLAISE and PICARD), A., i, 349.  
 action of the chlorides of, on zinc organic compounds (BLAISE and PICARD), A., i, 175, 260.  
**Allantoin**, presence of, in foods (ACKROYD), A., ii, 308.  
 importance of, in purine metabolism (HUNTER and GIVENS), A., ii, 218.  
**Alleneketens**, attempts to prepare (STAUDINGER and OTT), A., i, 639.  
**Allium sativum** (garlic), action of, on lead and mercury (BANERJEE), P., 234.  
**d-Allonolactone** (LEVENE and JACOBS), A., i, 15.  
**Allophane**, composition of (THUGUTT), A., ii, 210; (STREMME), A., ii, 406.  
 colour reactions of (THUGUTT), A., ii, 501.  
**Allophanic acid**, aloin salt of (VEREINIGTE CHININFABRIKEN ZIMMER & Co.), A., i, 480.  
 amyl ester (CHEMISCHE WERKE VORM. DR. H. BYK), A., i, 118.  
 isobutyl and tert.-amyl esters (REMFY), T., 624; P., 73.  
 $\alpha$ -methyl- $\beta$ -trichloroethyl and tetrachloroethyl esters of (VEREINIGTE CHININFABRIKEN ZIMMER & Co.), A., i, 118.  
**d-Allose**, and its *p*-bromophenylhydrazone (LEVENE and JACOBS), A., i, 15.  
**Allotropy**, new theory of (SMITS and DE LEEUW), A., ii, 263.  
**Alloxan**, decomposition of (GORTNER), A., i, 325.  
 relation of, to triketohydrindene hydrate (RUHEMANN), T., 792; P., 97.  
 derivatives of (PELLIZZARI and CANTONI), A., i, 337.  
 oxidation of amino-acids by (TRAUBE), A., i, 960.  
 interaction of, and glycine (HURTLEY and WOOTTON), T., 288; P., 2.  
**5-Alloxan-3-allylrhodanic acid** (BUTSCHER), A., i, 333.  
**5-Alloxan-3-methylrhodanic acid** (BUTSCHER), A., i, 333.

**5-Alloxan-3-phenylrhodanic acid** (BUTSCHER), A., i, 333.

**5-Alloxan-3-p-tolylrhodanic acid** (BUTSCHER), A., i, 333.

**Alloys**, density of (FRILLEY), A., ii, 879.  
eutectic, composition of (LOSEFF), A., ii, 496.  
feebly magnetic, magnetic constants of (GNESOTTO and BINGHINOTTO), A., ii, 251.  
microscopic examination of (LE CHATELIER), A., ii, 894.  
quantitative analysis of (KORTE), A., ii, 155.  
resistant, action of phosphoric acid on (WUNDER and JEANNERET), A., ii, 719.

**Allyl alcohol**, phenylurethane of (PARISSELLE), A., i, 941.

**Allylaminocetic acid**, methyl ester (FRANKLAND and O'SULLIVAN), T., 2334; P., 319.

**Allylcarbinol**, derivatives of (PARISSELLE), A., i, 940.

**N-Allylglycine**, and its ethyl ester (ALPERN and WEIZMANN), T., 86.

**1-Allylcyclohexan-1-ol** (MATSCHUREVITSCH), A., i, 962.

**Allyliminocarbonic acid**, diphenyl ester (CHEMISCHE FABRIK LADENBURG), A., i, 488.

**Allylmalonic acid**, esters of, condensation of thiocarbamide with (JOHNSON and HILL), A., i, 502.

**9-Allyloxyanthranol** (KONDO), A., i, 67.

**Allylphthalamic acid** (JOHNSON and JONES), A., i, 455.

**2-Allylthiophen** (GRISHKEWITSCH-TROCHIMOWSKY), A., i, 481.

**Allylvalerolactone- $\alpha$ -carbonylthiocarbamide** (JOHNSON and HILL), A., i, 503.

**Almond**, lipolytic enzyme in (TONEGUTTI), A., ii, 525.

**Aloe-emodin**, rhein, and chrysophanic acid, relation between (OESTERLE), A., i, 887.

**tetranitro-** (LÉGER), A., i, 140.

**Aloin** allophanate, carbonate and ethyl carbonate (VEREINIGTE CHININFABRIKEN ZIMMER & Co.), A., i, 480.

formic acetic esters of (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 659.

**Aloins**, action of nitric acid on (LÉGER), A., i, 140, 734.

**Alloxanhydrazine** (RICHTER), A., i, 757.

**Alloxantin**, constitution of (RICHTER), A., i, 756.

**d-Altronic acid**, and its calcium salt (LEVENE and JACOBS), A., i, 15.

**d-Altrose**, and its phenylosazone and phenylbenzylhydrazone (LEVENE and JACOBS), A., i, 15.

**Alumina**. See Aluminium oxide.

**Aluminium**, positive potential of (WRIGHT), A., ii, 456.  
instability of (LE CHATELIER), A., ii, 398.  
amalgamated, use of, in analyses (KOHN-ABREST), A., ii, 673.  
preparation of ammonium salts from nitrogen compounds of (BADISCHE ANILIN- & SODA-FABRIK), A., ii, 1088.  
stopcocks, use of, for hydrogen sulphide (CAMPBELL), A., ii, 596.  
influence of, on plant development (STOKLASA), A., ii, 643.  
absorption of, from food (STEEL), A., ii, 507.  
compound of boric acid and (CHEMISCHE FABRIK COSWIG-ANHALT), A., ii, 984.

**Aluminium alloys** with magnesium (BRONIEWSKI), A., ii, 115; (WILM), A., ii, 493.  
with zinc (ROSENHAIN and ARCH-BUTT), A., ii, 895.

**Aluminium apparatus** (MASTBAUM), A., ii, 106.

**Aluminium salts**, formulæ of (COOPS), A., ii, 116; (OLIVIER), A., ii, 206.  
estimation of free acid and base volumetrically in (CRAIG), A., ii, 335.

**Aluminium bromide**, conductivity of solutions of, in nitrobenzene (PLOTNIKOFF), A., ii, 247.  
as a solvent (IZBEKOFF and PLOTNIKOFF), A., ii, 493.  
equilibrium of, with ethylene dibromide (MENSCHUTKIN), A., i, 1.  
compounds of, with acid chlorides (MENSCHUTKIN), A., i, 45.  
chloride, compounds of with acid chlorides (MENSCHUTKIN), A., i, 45.  
action of, on benzene (HOMER), A., i, 276.  
halides, compounds of, with acetophenone and benzophenone (MENSCHUTKIN), A., i, 65.

hydroxide, solubility of (HERZ), A., ii, 728.  
precipitation of, in the granular form (TAYLOR), A., ii, 542.

adsorption of arsenic by (LOCKEMANN and PAUCKE), A., ii, 720.

oxide (alumina) and silica in allophane, halloysite and montmorillonite (THUGUTT), A., ii, 210; (STREMME), A., ii, 406.

**Aluminium oxide**, equilibrium of, calcium oxide and silica (SHEPHERD, RANKIN, and WRIGHT), A., ii, 725.  
 separation of, and ferric oxide, (BARBIER), A., ii, 70.  
**phosphate**, spectroscopic investigation of the positive ions from heated (HORTON), A., ii, 90.  
 mobility of positive ions from (TODD), A., ii, 1050.  
**silicate minerals** in soils (VAN DER LEEDEN), A., ii, 299.  
**sulphide** (BILTZ and CASPARI), A., ii, 804.

**Alumosilicates**, terminology of (MORO-ZEWICZ), A., ii, 121.

**Aluminium**, microchemical detection of (SCHOORL), A., ii, 443.  
 and its alloys, analysis of (KLEIST), A., ii, 772.  
 separation of, and glucinum (WUNDER and CHÉLADZÉ), A., ii, 773.  
 separation of ions from (CHARITSCH-KOFF), A., ii, 543.  
 separation of iron, chromium and, (TCHARVIANI and WUNDER), A., ii, 156; (SCHIRM), A., ii, 936.

**Alumosilicates**. See under Aluminium.

**Alums**, influence of acids on the crystalline form of (WEYBERG), A., ii, 263.

**Alunite** in the litparite from Grosseto (PANICHI), A., ii, 210.

**Alunite-bendantite group**, minerals of the (SCHALLER), A., ii, 1101.

**Amalgams**. See Mercury alloys.

*Amanita muscaria*. See Fly agaric.

**Amber** from Galicia (NIEDZWIEDZKI), A., ii, 497.

**Amides**, action of isoamyl nitrite on (SMIRNOFF), A., i, 427.  
 action of cotarnine on (KNOLL & Co.), A., i, 670.  
 action of hypobromous acid on (BOIS-MENU), A., i, 957.  
 action of oxalyl chloride on (BORN-WATER), A., i, 616.  
 compounds of chloral with (CHEMISCHE FABRIK GEDEON RICHTER), A., i, 836.  
 toxicity of (DESGREZ), A., ii, 1119.  
 acid, alkylation of (MATSUI), A., i, 185.  
 hydrolysis of (REID), A., ii, 477.  
 halogenated, sodium derivatives of (MAUGUIN), A., i, 357.

**Amidines**, tautomerism of (PUMMERER), A., i, 399.  
 action of, on cyanoguanidine (OSTROGOVICH), A., i, 332.

**Amidosulphonic acid**, methyl ester (EPHRAIM and LASOCKI), A., ii, 276.

**Amines**, synthesis of, from oximes (MAILHE and MURAT), A., i, 535.  
 capillary rise of (SKRAUP and PHILIPPI), A., ii, 587.  
 combination of, with acetyleneketones (ANDRÉ), A., i, 268.  
 action of isoamyl nitrite on (SMIRNOFF), A., i, 427.  
 compounds of, with ethyl metaphosphate (LANGFIELD), A., i, 706.  
 action of, on oxalyl chloride on (BORN-WATER), A., i, 616.  
 action of, on triphenylcarbinol and tritylcarbinol (GREEN and WOODHEAD), A., i, 481.  
 aliphatic, salts of pertitanic acid with (KUROWSKI and NISSENMANN), A., i, 183.  
 aromatic, action of bornyl chloride on (ULLMANN and SCHMID), A., i, 70.  
 elimination of halogens by (OSTRO-MISSLSENSKY and ALABÉEFF), A., i, 534.  
 nitration of (REVERDIN and DE LUC), A., i, 37.  
 primary, lactylation of (ELBS and SINNER), A., i, 191.  
 cyclic, colour reactions of (LLORENS), A., ii, 78.  
 cyanodihydrocyclic (KAUFMANN, WIDMER, and ALBERTINI), A., i, 749, 750.  
 fatty, action of, on *s*-dibromosuccinic acid (FRANKLAND and SMITH), P., 320.  
 secondary, preparation of, from carboxylic acids (LE SUEUR), T., 827; P., 104.  
 tertiary mixed, formation of (EMDE and SCHELLBACH), A., i, 281.

**Amino-acids**, formation of, in the liver (EMBDEN and SCHMITZ), A., ii, 52.  
 production of, in plants (FRANZEN), A., ii, 323.  
 preparation of (FISCHER and GROH), A., i, 773.  
 preparation of esters of (ZELINSKY, ANNENKOFF, and KULIKOFF), A., i, 773.  
 attempts to prepare glycerides of (ALPERN and WEIZMANN), T., 84.  
 isolation of, from hydrolysis of proteins (ABDERHALDEN and WEIL), A., i, 1049.  
 of whalebone (ABDERHALDEN and LANDAU), A., ii, 509.  
 derivatives of (ABDERHALDEN and BAUMANN), A., i, 543.  
 oxidation of (DENIS), A., i, 616, 773.  
 oxidation of, by alloxan, isatin and *p*-benzoquinone (TRAUBE), A., i, 960.

**Amino-acids**, action of carbon disulphide on (SIEGFRIED and WEIDENHAUPT), A., i, 116.  
 change of, into hydroxy-acids by moulds (EHRLICH and JACOBSEN), A., ii, 520.  
 behaviour of mould fungi towards (HERZOG and SALADIN), A., ii, 915.  
 degradation of, in yeast fermentation (NEUBAUER and FROMHERZ), A., i, 201.  
 value of, in the dog's organism (ABDERHALDEN and MARKWALDER), A., ii, 634; (ABDERHALDEN, FURNO, GOEBEL, and STRÜBEL), A., ii, 1002.  
 excretion of, in disease (MASUDA), A., ii, 631.  
 effects of loss of blood and prolonged inanition on the excretion of (FUCHS), A., ii, 58.  
 complex chromium salts of (TSCHEU-GAEFF and SERBIN), A., i, 115.  
 aromatic, alkylation of (WHEELER and HOFFMAN), A., i, 446.  
 degradation of, in the body (SUWA), A., ii, 634.  
 free, in the intestine (ABDERHALDEN), A., ii, 1011.  
**α-Amino-acids**, behaviour of, in animals (KNOOP and KERTESS), A., ii, 514.  
**Amino-alcohols**, secondary, preparation of (LES ETABLISSEMENTS POULENC FRÈRES and FOURNEAU), A., i, 291.  
**Aminoaryl alcohols**. See Alcohols, aminoaryl.  
**Amino-compounds**, aliphatic, action of oxygen on, in the presence of copper (TRAUBE), A., i, 940.  
 aromatic, colorations produced by the interaction of, and nitro-compounds (WALTER), A., i, 363.  
**Amino-group**, aliphatic, estimation of the (VAN SLYKE), A., ii, 164.  
**Amino-groups**, estimation of (VAN SLYKE), A., ii, 944.  
 apparatus for estimation of (KLEIN), A., ii, 1143.  
**N-Aminoheterocyclic compounds** (FRANZEN and KRAFT), A., i, 816.  
**Amino-ketones**, *N*-alkylated, reduction of (EMDE and RUNNE), A., i, 714.  
 aromatic (KUNKELL), A., i, 990.  
 ethylenic  $\beta$ -substituted, preparation of (ANDRÉ), A., i, 288.  
**α-Amino-ketones** (GABRIEL), A., i, 212.  
 synthesis of (MANNICH and HAHN), A., i, 648.  
**Aminophenols**, formation of salts by (SUIDA), A., i, 284.  
**Ammine** persulphates, metallic (BARRIERI and CALZOLARI), A., ii, 889.  
**Amminediethylenediaminecobaltic salts**, bromo- and chloro- (WERNER, KING, and SCHOLZE), A., i, 614.  
**Ammonia**, formation of, from its elements (McDERMOTT), A., ii, 389.  
 formation of, in the arc discharge (MAKOWETZKY), A., ii, 463.  
 synthesis of (WOLTERECK), A., ii, 598.  
 synthesis of, by heat (CARDELL and THOMAS), P., 138.  
 catalytic synthesis of, by means of iron (JELLINEK), A., ii, 798.  
 from compounds containing nitrogen and carbon (SCHREIBER), A., ii, 881.  
 liquid, use of, in chemical reactions (CHABLAY), A., i, 939.  
 absorption of, from the atmosphere (HALL and MILLER), A., ii, 763.  
 electrolysis of aqueous (MÜLLER), A., ii, 598.  
 action of the electric discharge on dry and moist (BESSON), A., ii, 718.  
 direct action of radium on (PERMAN), T., 132; P., 7.  
 distribution of, between water and chloroform (BELL and FEILD), A., ii, 591.  
 sulphuric acid and water, equilibrium in the system (VAN DORP), A., ii, 379.  
 zinc nitrate and water, equilibrium in the system (STASEVITSCH), A., ii, 476.  
 vapour pressures of aqueous solutions of (HERZEN), A., ii, 390.  
 solubility of, in water (BRICHAUX), A., ii, 390.  
 aqueous, velocity of solution of metallic copper in (YAMASAKI), A., ii, 383.  
 solubility of cuprous oxide in aqueous solutions of (DONNAN and THOMAS), T., 1788; P., 213.  
 haemolysis by (STADLER and KLEEMAN), A., ii, 996.  
 disappearance of, in the blood (MEDVEDEFF), A., ii, 739.  
 in flames (REIS), A., ii, 483.  
 formation in soils (LIPMAN, BROWN, and OWEN), A., ii, 649.  
 compounds of organic salts of bivalent metals with (GROSSMANN and JÄGER), A., i, 944.  
 liquid, action of, on hydrazine salts (BROWNE and WELSH), A., ii, 1084; (BROWNE and HOULEHAN), A., ii, 1085.  
 compounds of, with stannous chloride (SOFIANOPOULOS), A., ii, 403.  
 action of, on sugar solutions (JOLLES), A., i, 421.

**Ammonia**, action of, on sulphur dioxide (EPHRAIM and PIOTROWSKI), A., ii, 274.  
 amount of, in normal urine (TAYLOR), A., ii, 415.  
 excretion of, in urine (GAMMELTOFT), A., ii, 1115.  
 estimation of, in small quantities (ARTMANN), A., ii, 226.  
 free, estimation of, volumetrically (THOMLINSON), A., ii, 151.  
 estimation of, in urine (STEEL), A., ii, 68 ; (FOLIN), A., ii, 331.  
 estimation of, in water (SÜPFLE), A., ii, 940.  
 separation and estimation of, and pyridine (DELÉPINE and SORNET), A., ii, 827.  
**Ammonias**, substituted, metallic compounds of (LANG), P., 140.  
**Ammonium** electrode. See Electrode under Electrochemistry.  
 solutions, studies of (SLADE), T., 1974 ; P., 242.  
**Ammonium salts**, preparation of, from aluminium compounds with nitrogen (BADISCHE ANILIN- & SODA-FABRIK), A., ii, 1088.  
 hydrolytic dissociation of (SMITH), A., ii, 393.  
**Ammonium carbonate**, estimation of, volumetrically (THOMLINSON), A., ii, 151.  
 dysprosium carbonate (JANTSCH and OHL), A., ii, 492.  
 chloride, piezo-optical properties of (KREUTZ), A., ii, 352.  
 lead chloride and water, the system (BRÖNSTED), A., ii, 381.  
 sublimation of (WEIGSCHEIDER), A., ii, 16.  
 cyanate, transformation of, into carbamide (CHATTAWAY), P., 280.  
 hydroxides, quaternary, decomposition of (v. BRAUN), A., i, 610.  
 neodymo-, praseodymo- and samaromolybdates (BARBIERI), A., ii, 291.  
 trinitride, action of, on metals (BROWNE and HOULEHAN), A., ii, 1085.  
 nitrite, preparation of (NEOGI and ADHICARY), T., 116.  
 rhodobromide (GOLOUBKINE), A., ii, 45.  
 selenate, preparation of (MATHERS and BONSIB), A., ii, 603.  
 sulphate, instability of (SMITH), A., ii, 393.  
 density of solutions of (WIENER), A., ii, 394 ; (DEKHUYZEN), A., ii, 603.  
 estimation of (BLAIR), A., ii, 534.

**Ammonium**, sulphide, detection of, in wine (GAZZETTI and SARTI), A., ii, 150.  
**Diammonium** compounds, asymmetric resolution of (FRÖHLICH), A., i, 493.  
**Ammonium organic compounds**, aromatic sulphonated, preparation of (BADISCHE ANILIN- & SODA-FABRIK), A., i, 627.  
 quaternary, fission of, by reduction (EMDE and SCHELLBACH), A., i, 281.  
 kinetics of (v. HALBAN), A., i, 852.  
 aromatic, cryoscopic behaviour of, in bromoform (WEDEKIND and PASCHKE), A., ii, 1060.  
 rate of decomposition of (WEDEKIND, PASCHKE, and MAYER), A., i, 628.  
 asymmetric (MELDOLA and KUNTZEN), T., 1283, 2034 ; P., 157, 263.  
 thiocyanate, electrical conductivity of the system ferric chloride and (BONGIOVANNI), A., ii, 1052.  
**Ammonium organic halides**, molecular state of, in non-dissociating media (HANTZSCH and HOFMANN), A., i, 608.  
 titanium formate (STÄHLER and BACHRAN), A., ii, 1097.  
**Ammonium carnallite** (BILTZ and MARCUS), A., ii, 799.  
 $\psi$ -**Ammonium base** from pyridine and its ethyl and methyl alcoholates (KÖNIG), A., i, 485.  
**Ammonium bases**, primary, secondary, and tertiary, preparation of the nitrites of (NEOGI), P., 242.  
**Ammonium bases**, cyclic (DECKER and KAUFMANN), A., i, 1023.  
 quaternary, crystallography of the platinii- and stanni-salts of (RIES), A., i, 953.  
 $\psi$ -**Ammonium bases**, constitution of (KAUFMANN and STRÜBIN), A., i, 321 ; (DECKER and KAUFMANN), A., i, 807.  
**Amorphous** and crystalline states (DOELTER), A., ii, 376.  
**Amygdalin**, hydrolysis of, by emulsin (ROSENTHALER), A., i, 99.  
**Amyl** nitrite, nitro- (v. BRAUN and SOBECKI), A., i, 831.  
*iso***Amyl** nitrite, action of, on amines and amides (SMIRNOFF), A., i, 427.  
*iso***Amylacetone**. See  $\beta$ -Methylheptan- $\epsilon$ -one.  
**Amylamine**,  $\epsilon$ -hydroxy-, and its derivatives (v. BRAUN and SOBECKI), A., i, 831.

**Amylases** (SHERMAN and SCHLESINGER), A., i, 827.  
**Amylopectin**, characteristic properties of (GATIN-GRUZEWSKA), A., i, 357.  
**Amylose**, characteristic properties of (GATIN-GRUZEWSKA), A., i, 357.  
*n*-**Amylisopropylcarbinol**, rotation of (PICKARD and KENYON), P., 324.  
**1-isoAmylpyridinium** salts (DECKER, KAUFMANN, SASSU, and WISLOKI), A., i, 1024.  
**1-isoAmyl-2-pyridone** (DECKER, KAUFMANN, SASSU, and WISLOKI), A., i, 1024.  
**Amyltrimethylammonium**, amino-, hydroxide, and its salts (v. BRAUN), A., i, 613.  
**Anæsthetics** (BRITISH ASSOCIATION REPORTS), A., ii, 814.  
 action of, on osmosis in plants (LEFFESCHKIN), A., ii, 919.  
 local (ESCH), A., ii, 136.  
 and narcotics (GROS and HARTUNG), A., ii, 136.  
 effect of, on nerve (SYMES and VELEY), A., ii, 508.  
 detection of (HANKIN), A., ii, 162.  
**Analcite** from Brödtorp (BORGSTRÖM), A., ii, 120.  
**Analysis**, increased accuracy and speed in (RIDSDALE and RIDSDALE), A., ii, 1133.  
 of binary compounds by means of the law of mass action (ÖSTROMISSLENSKY), A., ii, 195, 476 ; (RUFF), A., ii, 264.  
 of gases. See Gas analysis.  
 capillary (TRAUBE), A., ii, 328.  
 of colloidal solutions (SAHLBOM), A., ii, 100 ; (FICHTER and SAHLBOM), A., ii, 259.  
 electrolytic (BRITISH ASSOCIATION REPORTS), A., ii, 824 ; (BENNER and HARTMANN), A., ii, 148 ; (PRICE and HYDE), A., ii, 539 ; (FISCHER, THIELE, and STECHER), A., ii, 1129 ; (BRUNCK), A., ii, 1136.  
 apparatus for (BAUMANN), A., ii, 925.  
 elementary organic (KURTENACKER), A., ii, 823 ; (AUZIES), A., ii, 928.  
 gravimetric simplified (PALOMAA), A., ii, 531.  
 iodometric, use of sulphur dioxide in (ELVOVE), A., ii, 148.  
 microscopic, sedimentation tube for (SCHWABE), A., ii, 651.  
 qualitative, without using hydrogen sulphide (EBLER), A., ii, 932.  
 without hydrogen or ammonium sulphides (PAMFIL), A., ii, 1030 ; (ROCHE), A., ii, 1031.

**Analysis**, thermal, of binary mixtures of metallic chlorides (MENGE), A., ii, 982 ; (SANDONNINI and SCARPA), A., ii, 984.  
 toxicological, estimation of arsenic in (NEY), A., ii, 932.  
 volumetric, with small quantities of liquid (PILCH), A., ii, 225.  
 physico-chemical volumetric (DUTOIT and v. WEISSE), A., ii, 1129, 1130, 1137.  
**Anaphylaxis**, gaseous metabolism in (LOENING), A., ii, 993.  
**Andromedotoxin**, detection of, in *Eriçaceæ* (TUNMANN), A., ii, 1023.  
**Anethole**, dehydration of the glycol of (PAOLINI), A., i, 779.  
**Anethole glycol**, dehydration of (BALBIANO), A., i, 987.  
**Angelica root oil**, constituents of (BÖCKER and HAHN), A., i, 313.  
**Anglesite**, synthesis of (PIOLTI), A., ii, 902.  
**Angostura alkaloids** (TRÖGER and RUNNE), A., i, 482.  
**Anhydrides**, acid, action of alkyl halides on (VANIN), A., i, 416.  
 action of, on the sodium derivative of phenylacetonitrile (BODROUX), A., i, 545.  
 aromatic inner, reaction for (BARDACH), A., ii, 826.  
**Anhydroanthraquinone-9-hydrazone-1-carboxylic acid**. See Pyridazonanthrone.  
**N-Anydrobenzoylaminolauronic acid** (WEIR), T., 1276 ; P., 154.  
**N-Anydrocarboxymethylaminolauronic acid** (WEIR), T., 1274 ; P., 154.  
**Anhydrocotarnine-5-aminophthalide** and its derivatives (HOPE and ROBINSON), T., 1159.  
**Anhydrocotarnine-5-hydrazinophthalide** and its benzylidene derivative (HOPE and ROBINSON), T., 1162.  
**Anhydrocotarnine-5-iodophthalide** and its salts (HOPE and ROBINSON), T., 1161.  
**Anhydrocotarnine-2:4-dinitrophenyl-acetic acid**, methyl ester (HOPE and ROBINSON), T., 2132.  
**Anhydrocotarninenitroethane** methiodide (HOPE and ROBINSON), T., 2122.  
**Anhydrocotarninenitromethane** and its picrate and methiodide (HOPE and ROBINSON), T., 2119.  
**Anhydrocotarnine-5-nitrophthalide** and its salts (HOPE and ROBINSON), T., 1158.  
**Anhydrocotarnine-2- and 4-nitrotoluenes** (HOPE and ROBINSON) T., 2123, 2124.

**Anhydrocotarnine-2:4- and 2:6-dinitrotoluenes** and their salts (HOPE and ROBINSON), T., 2126, 2128.

**Anhydrocotarnine-2:4:6-trinitrotoluene** (HOPE and ROBINSON), T., 2133.

**Anhydrocotarnine-*o*-nitro-*p*-toluic acid**, methyl ester (HOPE and ROBINSON), T., 2125.

**Anhydrocotarninephthalide**, synthesis of, and its salts (HOPE and ROBINSON), T., 1163; P., 125.

**Anhydrodiphenylglycolylphenylhydr-oxyamine** (STAUDINGER and JELAGIN), A., i, 215.

**Anhydrogitaligenin** (KRAFT), A., i, 734.

**Anhydrotigalins** (KRAFT), A., i, 734.

**Anhydrohydrastininenitromethane** and its picrate (HOPE and ROBINSON), T., 2136.

**Anhydrohydrastinine-2:4-dinitrotoluene** (HOPE and ROBINSON), T., 2137.

**N-Anhydromethylaminolauronic acid** (WEIR), T., 1274; P., 154.

**Anhydromethylene-3:4-dichlorophenyl-glycine-2-carboxylic acid** (BADISCHE ANILIN- & SODA-FABRIK), A., i, 539.

**Anilides**, chlorination of (ORTON and KING), T., 1369; P., 196.

**Aniline**, absorption spectrum of, in the ultra-violet (KOCH), A., ii, 786. and its homologues, cause of the red coloration of (GIBBS), A., i, 534. solubility of, in aqueous solutions of its hydrochloride (SIDGWICK, PICKFORD, and WILSDON), T., 1122; P., 127. effect of heat on a mixture of benz-aldehydecyanohydrin and (EVEREST and McCOMBIE), T., 1752; P., 218. nitration of (HOLLEMAN, HARTOGS, and VAN DER LINDEN), A., i, 364. oxidation of (MAJIMA), A., i, 216; (MAJIMA and AOKI), A., i, 992. condensation product of, with anthranil (HELLER and GRÜNTHAL), A., i, 275. and *p*-chloro-, compounds of, with antimony trichloride (MAY), T., 1384; P., 125. compound of, with zinc chloride (HODGES), A., i, 191. salts of (HILDITCH), T., 236. hydrochloride, conductivity and viscosity of aqueous solutions of (SIDGWICK and WILSDON), T., 1118; P., 127.

**Aniline**, dichloro-, diazo-compound, coupling of, with theophylline (KALLE & Co.), A., i, 507. *s*-trichloro-, preparation of (ORTON and KING), T., 1192.

**Aniline**, 2:3:4:6-tetraiodo- (BOYLE), T., 333.

**Anilines**, chlorination of (ORTON and KING), T., 1185; P., 139.

**Aniline black** (WILLSTÄTTER and CRAMER), A., i, 90, 736; (GREEN and WOLFF), A., i, 900.

**Aniline-2-sulphinic acid**, and 4-bromo-, and its sodium salt (CLAASZ), A., i, 436.

**Aniline-*o*-sulphonic acid**, 2-iodo-4-nitro-, and *p*-nitro-, and their salts (BOYLE), T., 329.

**Aniline-*m*-sulphonic acid**, 4:5-*di*-iodo- (BOYLE), T., 331.

**Anilinoacetic acid**, *o*-bromo-, and *o*-iodo-, ethyl esters (SCHOELLER, SCHRAUTH, and GOLDAKER), A., i, 699.

**ω-Anilinoacetophenone**, *p*-chloro-, phenylhydrazone and semicarbazone (BUSCH and HEFELE), A., i, 584.

**1-Anilinoanthraquinone** and *o*- and *p*-amino-, and their acetyl derivatives, 4'-chloro-2'-nitro-, and *o*- and *p*-nitro- (ULLMANN and FODOR), A., i, 467.

**1-Anilinoanthraquinone-2-carboxyl chloride** (BADISCHE ANILIN- & SODA-FABRIK), A., i, 980.

**1-Anilinoanthraquinone-2-carboxylic acid** and its sodium salt, and 4'-chloro- (BADISCHE ANILIN- & SODA-FABRIK), A., i, 980.

**Anilinobenzophenone**, tetrahydroxy- (EHRMANN), A., i, 459.

**Anilino-*p*-benzoquinoneanil**, amino-, and its sulphate and hydrochloride (MAJIMA), A., i, 216.

**5-Anilino-*p*-benzoquinonedianil**, 2-amino- (MAJIMA and AOKI), A., i, 992.

**5-Anilino-1-*p*-bromophenyl-2:3-dimethylpyrazole** (MICHAELIS and ABRAHAM), A., i, 1038.

**5-Anilino-1-*p*-chlorophenyl-2:3-dimethylpyrazole** (MICHAELIS and ABRAHAM), A., i, 1038.

**2-Anilinodiphenylamine**, 2:4:6:5'-tetranitro- (KEHRMANN and RIERA Y PUNTI), A., i, 926.

**α-Anilino-fatty acids**, mercuriated, synthesis of (SCHOELLER, SCHRAUTH, and GOLDAKER), A., i, 699.

**Anilinonaphthalene**, 1-acetylamo-8-*op*-dinitro-, and its derivatives (SACHS and FORSTER), A., i, 754.

**2-Anilino-*α*-naphthaquinone**, *p*-amino-, and its sulphate (PUMMERER and BRASS), A., i, 654.

**8-Anilinonaphthyloxamic acid**, *op*-dinitro-, ethyl and methyl esters (SACHS and FORSTER), A., i, 755.

**8-Anilino-1-naphthylphenylcarbamide, *op*-dinitro-** (SACHS and FORSTER), A., i, 755.

**8-Anilino-1-naphthylphenylthiocarbamide, *op*-dinitro-** (SACHS and FORSTER), A., i, 755.

**8-Anilino-1-naphthylsuccinamic acid, *op*-dinitro-, and its anhydride** (SACHS and FORSTER), A., i, 755.

**5-Anilino-1-*m*-nitrophenyl-3-methylpyrazole** (MICHAELIS, GRAFF, GESING, and BOIE), A., i, 235.

**Anilino-oximinoacetonitrile** (STEINKOPF and JÜRGENS), A., i, 530.

**β-Anilino-γ-phenoxy-α-*p*-chlorophenylcrotononitrile** (v. WALTHER and HERSCHEL), A., i, 238.

**γ-Anilinophenoxypropanol and its picrate** (LES ETABLISSEMENTS POULENC FRÈRES and FOURNEAU), A., i, 291.

**α-Anilino-ε-phenylhydrazinopiperylene, *m*-chloro-** (KÖNIG), A., i, 485.

**4-Anilinophenylimino-3-phenyliso-oxazolone** (MEYER), A., i, 687.

**5-Anilino-1-phenyl-3-methylpyrazole.** See 5-Anilino-1-phenyl-3-methylpyrazolone.

**Anilino-9-phenylxanthenyl, 3:6-*di*-*p*-amino-, and 3:6-*di*-*p*-hydroxy-, chlorides** (POPE and HOWARD), T., 553.

**8-Anilino-1-propyldieneanimonaphthalene, *op*-dinitro-** (SACHS and FORSTER), A., i, 755.

**Anilino-ααββ-tetraphenylpropionic acid, β-lactam of** (STAUDINGER and JELAGIN), A., i, 215.

**5-Anilino-1-*p*-tolyl-3-methylpyrazole, 5-acetyl and 5-benzoyl derivatives** (MICHAELIS and RISSE), A., i, 1039.

**ω-Anilinotriphenylmethane-4-carboxylic acid** (STAUDINGER and CLAR), A., i, 638.

**2:5-*endo*Anilino-1-*o*-, and *p*-azophenyl-2-3-dimethylpyrazole (*o*- and *p*-azoanilopyrine)** (MICHAELIS, GRAFF, GESING, and BOIE), A., i, 235.

**5-Anilino-1-*p*-bromophenyl-3-methylpyrazolone** (MICHAELIS and ISERT), A., i, 1037.

**5-Anilino-1-bromophenyl-3-methylpyrazolone, 4:5-dibromo-** (MICHAELIS and THOMAS), A., i, 1038.

**5-Anilino-1-*p*-chlorophenyl-3-methylpyrazolone** (MICHAELIS and ISERT), A., i, 1037.

**5-Anilino-1-phenyl-4-anisylidene-β-methylpyrazolone** (MICHAELIS and RISSE), A., i, 1038.

**5-Anilino-1-phenyl-4-benzylidene-3-methylpyrazolone** (MICHAELIS and RISSE), A., i, 1038.

**1-Anilino-1-phenyl-2-3-dimethylpyrazole, *p*-bromo-, and *p*-chloro-, and their salts** (MICHAELIS, THOMAS, and ISERT), A., i, 1042.

**2:5-Anilino-1-phenyl-2-3-dimethylpyrazole (anilopyrine), amino-, azo-, and nitro-derivatives of, and their salts** (MICHAELIS, GRAFF, GESING, and BOIE), A., i, 235.

**2:5-Anilino-1-phenyl-2-3-dimethylpyrazole, *m*- and *p*-amino-, *m*- and *p*-nitro-, and their salts and derivatives** (MICHAELIS, WURLAND DOEPMANN), A., i, 1040.

***m*- and *p*-bromo-, *p*-chloro-, *m*:*p*-dichloro-, and their salts and derivatives** (MICHAELIS, THOMAS, and ISERT), A., i, 1042.

**2:5-Anilino-1-phenyl-2-ethylpyrazole and its salts** (MICHAELIS and WALTER), A., i, 1040.

**2:5-Anilino-1-phenyl-2-methylpyrazole and its salts** (MICHAELIS and WALTER), A., i, 1040.

**5-Anilino-1-phenyl-3-methylpyrazolone** and its salts, and 4-amino-, 5-bromo-, 5-nitro-, and 4-oximino-, and their derivatives (MICHAELIS), A., i, 1037.

**2:5-Anilino-1-phenyl-2-propylpyrazole and its salts** (MICHAELIS and WALTER), A., i, 1040.

**5-Anilino-1-phenylpyrazolone and derivatives and 4-oximino-** (MICHAELIS and WALTER), A., i, 1038.

**Anilopyrine.** See 2:5-*endo*Anilino-1-phenyl-2:3-dimethylpyrazole.

**4-Anilopyrine, *p*-nitro-** (MICHAELIS, GRAFF, GESING, and BOIE), A., i, 236.

**2:5-Anilino-1-*o*- and *p*-tolyl-2:3-dimethylpyrazoles and their salts** (MICHAELIS and MENTZEL), A., i, 1043.

**5-Anilino-1-*o*- and *p*-tolyl-3-methylpyrazolone** (MICHAELIS and RISSE), A., i, 1039.

**Anils (Schiff's bases), isomerism of** (MANCHOT), A., i, 36.

**Animal fluids, chemico-physical studies of** (QUAGLIARIELLO), A., ii, 962, 1114.

estimation of acetone in (SCOTT-WILSON), A., ii, 776.

estimation of iodine in (BERNIER and PÉRON), A., ii, 926.

proteins, action of, on vegetarians (ALBERTONI and ROSSI), A., ii, 411.

spinal, action of asphyxia on the (MATHISON), A., ii, 123.

tissues, action of trypsin on oxidation in (BATTELLI and STERN), A., ii, 808.

oxidation of isolated (HARDEN and MACLEAN), A., ii, 905.

**Animal fluids**, oxidation of succinic acid by (BATELLI and STERN), A., ii, 132.

estimation of cholesterol in (LAWORTH), A., ii, 305.

estimation of oxydase in (VERNON), A., ii, 750.

**Animals**, increase of protein during the fattening of (PFEIFFER and FRISKE), A., ii, 304.

cold-blooded, pancreatic diabetes in (DIAMARE), A., ii, 1117.

**Anisaldehyde**, electrolytic reduction of (TAFEL and SCHEPSS), A., i, 784.

action of, on the sodium derivative of phenylacetone (BODROUX), A., i, 783.

*p*-nitrophenylhydrazone (CIUSA and VECCHIOTTI), A., i, 811.

brucine sulphite (MAYER), A., ii, 223.

**Anisaldehyde-*p*-methoxyphenylhydrazone** (PADOA and SANTI), A., i, 1029.

**Anis-synaldoxime**, transformation of in various solvents (PATTERSON and MONTGOMERIE), P., 276.

**Anisic acid**, dithio- (*p*-methoxyphenylcarbithionic acid), and its salts and esters (BLOCH, HÖHN, and BUGGE), A., i, 46; (HÖHN and BLOCH), A., i, 49.

**o-Anisidine**, 5-chloro- (ORTON and KING), T., 1189.

*m*- and *p*-nitro-, separation of (CHEMISCHE FABRIK GRIESHEIM-ELEKTRON), A., i, 125.

**o-o-Anisidinoacetophenone** and its phenylhydrazone and semicarbazone (BUSCH and HEFELE), A., i, 583.

**o-p-Anisidinoacetophenone** and its derivatives (BUSCH and HEFELE), A., i, 584.

**β-Anisil-β-naphthylsazone** (PADOA and SANTI), A., i, 694.

**β-Anisil-o-m**-, and *p*-tolylsazone (PADOA and SANTI), A., i, 694.

**Anisole**, *o*-iodo-, behaviour of, in the organism (LUZZATO and SATTA), A., ii, 1015.

**o-Anisylcinnamamide** (STOERMER, FRIDERICI, BRÄUTIGAM, and NECKEL), A., i, 297.

**o-Anisylcinnamamylamide** (STOERMER, FRIDERICI, BRÄUTIGAM, and NECKEL), A., i, 297.

**o-Anisylcinnamanilide** (STOERMER, FRIDERICI, BRÄUTIGAM, and NECKEL), A., i, 297.

**o-Anisylcinnambenzylamide** (STOERMER, FRIDERICI, BRÄUTIGAM, and NECKEL), A., i, 297.

**o-Anisylcinnam-methylamide** (STOERMER, FRIDERICI, BRÄUTIGAM, and NECKEL), A., i, 297.

**1-p-Anisyl-2:3-dimethylbenzimidazolium**, chloride, 4:7-dinitro-6-hydroxy (MELDOLA and KUNTZEN), T., 2039.

**1-p-Anisyl-2:3-dimethyl-2-benzimidazolol**, 4:7-dinitro-6-hydroxy (MELDOLA and KUNTZEN), T., 2040.

**1-p-Anisyl-2:3-dimethyl-6-benzimidazolone**, 4:7-dinitro- (MELDOLA and KUNTZEN), T., 2039.

**α-p-Anisylhydrohydrastinine** and its salts (FREUND and LEDERER), A., i, 907.

**Anisylideneecinnamylideneacetone**. See *p*-Methoxystyryl  $\beta$ -styrylvinyl ketone.

**Anisylidenehydantoin** and bromo- (WHEELER and HOFFMAN), A., i, 499.

**α-Anisylidene-γ-*p*-methoxyphenylparacanic acid** (STOBBE and BENARY), A., i, 377.

**p-Anisyl-β-methylisobutyl alcohol** (HALLER and BAUER), A., i, 726.

**p-Anisyl-α-methylisobutyric acid** (HALLER and BAUER), A., i, 726.

**p-Anisyl-α-methylisobutyramide** (HALLER and BAUER), A., i, 726.

**2-Anisyl-4-methylcoumarone** (STOERMER and DECKER), A., i, 666.

**Anisylphenetylacetone** (BISTRZYCKI, PAULUS, and PERRIN), A., i, 869.

**Annual General Meeting**, T., 577; P., 77.

**Antesterol** and its acetates and their bromo-derivatives (KLOBB), A., i, 199.

**Anthocyanic pigments**, formation of (COMBES), A., ii, 1125.

**Anthracene**, derivatives and oxidation of (MEYER), A., i, 193, 196.

**Anthracene derivatives** (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 903.

**Anthradisooxazole** (FREUND and ACHENBACH), A., i, 70.

**Anthranil** (BAMBERGER and FODOR), A., i, 60.

homology of, with methylanthranil (SCHEIBER), A., i, 915.

constitution of, and its condensation product with aniline (HELLER and GRÜNTHAL), A., i, 275.

**Anthranilic acid**, (*o*-amino benzoic acid) 4-acetyl amino- (KALLE & Co.), A., i, 667.

5-bromo-, and 3:5-dibromo- and dichloro-, methyl esters (FREUNDLER), A., i, 637.

3:5-dibromo-, preparation of (ULLMANN and KOPETSCHNI), A., i, 292.

**Anthranilic acid**, 6-chloro-, and *tetrachloro*-, methyl esters (BADISCHE ANILIN- & SODA-FABRIK), A., i, 539.

**Anthranilic acids**, secondary, formation of red substances from the nitroso-derivatives of (HOUBEN and ARENDT), A., i, 128.

**Anthranol** (MEYER), A., i, 194.

**Anthranoyl-dibromoanthranilic acid**, *dibromo*-, *O-anhydride* (ULLMANN and KOPETSCHNI), A., i, 293.

**1-Anthrapyrimidone**, 4-amino- (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 167.

**Anthraquinol** (*oxanthranol*) and its *di-benzoate* (MEYER), A., i, 194.

**$\gamma$ -Anthraquinolinequinone** (2:3-pyridino-anthraquinone), (BALLY, SCHOLL, and LENTZ), A., i, 677.

**Anthraquinone** and ethyl ether, the system (SMITS and TREUB), A., ii, 871. condensation of, with phenols (SCHARWIN, KUSNEZOFF, NAUMOFF, GANDURIN, BJENKOFF, and DMITRIEFF), A., i, 655. preparation of halogen derivatives of (BADISCHE ANILIN- and SODA-FABRIK : FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 466. derivatives, preparation of (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 884, 1026. quinonoid properties of (SCHOLL and v. WOLODKOWITSCH), A., i, 888. use of, as mordant dyes (v. GEORGIEVICS), A., i, 546.

**Anthraquinone**, 1-amino- (ULLMANN and FODOR), A., i, 466. action of sulphuric acid and glycerol on (BALLY and SCHOLL), A., i, 676. 1:2-diamino-, preparation of (FARBERWERKE VORM. MEISTER, LUCIUS, & BRÜNING), A., i, 469. 4-bromo-1-amino-, benzoyl derivative (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 469. 8-bromo-2-amino- (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 995. 2:4-dibromo-1-amino-, acetyl derivative (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 167. 1-chloro-, and 1:5-dichloro-, oximes of (FREUND and ACHENBACH), A., i, 70. 1:2-, and 2:3-dichloro- (ULLMANN and BILLIG), A., i, 491. 1:8-dichloro- (BADISCHE ANILIN- & SODA-FABRIK), A., i, 466. 1:5- and 1:8-dichloro- (ULLMANN and KNECHT), A., i, 1010.

**Anthraquinone**, 1:4:5:8-tetrachloro-, *pena*-, and *hexachloro*, (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 466. *octahydroxy*-, and its acetate (v. GEORGIEVICS), A., i, 548.

**Anthraquinones**, nitrogen derivatives of (ULLMANN), A., i, 504. amino-, preparation of (BADISCHE ANILIN- & SODA-FABRIK), A., i, 884.

**Anthraquinone series** (ULLMANN and OCHSNER), A., i, 489 ; (ULLMANN and BILLIG), A., i, 490.

**Anthraquinone-1:2-acridone** (ULLMANN and SONE), A., i, 468. and *bromo*- (ULLMANN and OCHSNER), A., i, 489.

**Anthraquinone-2:1-acridone**, 4-amino- and 4-chloro- (ULLMANN and BILLIG), A., i, 491.

**Anthraquinone-1:2-acridonazine** (ULLMANN and SONE), A., i, 468.

**Anthraquinone-1-anilino-*o*-carboxylic acid** (ULLMANN and OCHSNER), A., i, 489.

**Anthraquinone-2-anilino-*o*-carboxylic acid** (ULLMANN and SONE), A., i, 468.

**Anthraquinone-1-5-bisanthranilic acid** (BADISCHE ANILIN- & SODA-FABRIK), A., i, 885.

**Anthraquinone-1-5-bis-*o*-thiolbenzoic acid** (BADISCHE ANILIN- & SODA-FABRIK), A., i, 885 ; (ULLMANN and KNECHT), A., i, 1010.

**Anthraquinone-1:8-bis-*o*-thiolbenzoic acid** (ULLMANN and KNECHT), A., i, 1010.

**Anthraquinone-2:1:6:5-, and 2:1:7:8-bisthioxanthone** (ULLMANN and KNECHT), A., i, 1011.

**Anthraquinonecarbamide chloride**, 1-amino- (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 167.

**Anthraquinone-2-carboxylic acid**, 1-nitro- (BADISCHE ANILIN- & SODA-FABRIK), A., i, 455.

**Anthraquinone-4'-chloro-1:2-dihydro-phenazine** (ULLMANN and FODOR), A., i, 468.

**Anthraquinone-2:1:6:5-diacridone** (ULLMANN and OCHSNER), A., i, 490.

**Anthraquinone-1:5-dianilinodi-*o*-carboxylic acid** (ULLMANN and OCHSNER), A., i, 490.

**Anthraquinone-1:2-dicarboxylic acid** and its anhydride and imide (SCHOLL and SCHWINGER), A., i, 995.

**Anthraquinone-2:6-dicarboxylic acid**, chloride and amide of (SEEBER), A., i, 386.

**Anthraquinonedihomosalicylic acid, tri-** and *hepta*-bromo-, and *tri*-iodo-, and their salts (CLEMMENSEN and HEITMAN), A., i, 543.

**Anthraquinone-1:2-dihydro-4-methyl-**phenazine (ULLMANN and FODOR), A., i, 468.

**Anthraquinone-1:2-dihydrophenazine** (ULLMANN and FODOR), A., i, 467.

**Anthraquinone-1:2-phenazine** (ULLMANN and FODOR), A., i, 467.

**Anthraquinone-3-sulphonic acid, 1:2-di-**amino- (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), A., i, 469.

**Anthraquinone-1-*o*-thiobenzoic acid** (ULLMANN and KNECHT), A., i, 1010.

**Anthraquinone-2:1-thioxanthone** (ULLMANN and KNECHT), A., i, 1010.

**Anthraquinoneurethane, 1-amino-, 1:4-di-**amino-, and 4-chloro-1-amino-, (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 167.

**Anthraquinolanthraquinone, 1:4-di-a-**amino- (ULLMANN and BILLIG), A., i, 491.

**4-Anthaquinolanthraquinone-2:1-acridone,  $\alpha$ -amino-** (ULLMANN and BILLIG), A., i, 491.

**4-(2'')-Anthraquinonylbenzophenone-2'-carboxylic acid** (SCHOLL and NEUVIUS), A., i, 453.

**$\alpha$ -, and  $\beta$ -Anthraquinonylglycine** (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), A., i, 548.

**Anthraquinonoxalinequinone,  $\alpha\beta$ -dihydroxy-** ( $\alpha\beta$ -dihydroxy-1:2-pyrazineanthraquinone) and its sodium derivative and amino- $\alpha\beta$ -dihydroxy-, and nitro- $\alpha\beta$ -dihydroxy- (SCHOLL and EDLBACHER), A., i, 756.

**Anthraquinyl diethyl ether** (MEYER), A., i, 195.

**Anthraquinyl dimethyl ether** (MEYER), A., i, 195.

**Anthraquinyl methyl ether** and its salts (MEYER), A., i, 195.

**Anthrarufin dimethyl ether** monoxime (FREUND and ACHENBACH), A., i, 70.

**Anthratriquinonedihomosalicylic acid** and its salts and derivatives (CLEMMENSEN and HEITMAN), A., i, 543.

**Anthrone** (MEYER), A., i, 194.

**Anthroneisoxazole** and 1-chloro- (FREUND and ACHENBACH), A., i, 70.

**Anthroxic acid**, ethyl and methyl esters (HELLER, FRANTZ, and JÜRGENS), A., i, 864.

**Anti-agglutination** by bacteria (WEIL), A., ii, 619.

**$\beta$ -Antiarin** (KILIANI), A., i, 138.

**Antiarol**, constitution of (THOMS and SIEBELING), A., i, 724.

**Antiaris toxicaria**, constituents of the sap of (KILIANI), A., i, 138.

**Antigens**, function of the spleen in the fixation of (LUCKHARDT and BECHT), A., ii, 812.

**Antimony**, equilibrium of mixtures of selenium with (PÉLABON), A., ii, 899. behaviour of, in the body (CLOETTA), A., ii, 419. action of seltzer water on (BARILLE), A., ii, 889. action of, on trypanosome infection (MORGENROTH and ROSENTHAL), A., ii, 632.

**Antimony alloys** with iron (PORTEVIN), A., ii, 898. with lead and tin (LOEBE), A., ii, 204. with tin (KONSTANINOFF and SMIRNOFF), A., ii, 1096.

**Antimony compounds**, germicidal action of, on *Bacillus typhosus* (MORGAN and COOPER), A., ii, 519.

**Antimony, tribromide and trichloride**, latent heat of fusion of (TÓTECZKO and MEYER), A., ii, 187. compounds of, with benzene and with substituted benzenes (MENSCHUTKIN), A., i, 273, 274.

**trichloride**, equilibrium of, with propylbenzene (MENSCHUTKIN), A., i, 532. compounds of, with aniline, *p*-chloroaniline, and *o*- and *p*-toluidines (MAY), T., 1384; P., 125.

**pentachloride**, double salts of, with alkaloid hydrochlorides (THOMSEN), A., i, 484.

**hydride**, solid (RECKLEBEN and SCHEIBER), A., ii, 404.

**Antimonous oxide**, oxidation of (TINGLE), A., ii, 1086.

**selenides**, electrical resistance of (PÉLABON), A., ii, 575.

**Antimony organic compounds** (MAY), T., 1382; P., 124; (MORGAN and MICKLETHWAIT), T., 2286; P., 274.

**Antimony**, detection and estimation of small quantities of (SCHIDROWITZ and GOLDSBROUGH), A., ii, 338. detection of, in cases of poisoning (PEDRAZZINI), A., ii, 438. estimation of, in water (GAUTIER and MOUREU), A., ii, 301.

**detection, separation and estimation of arsenic and** (BRESSANIN), A., ii, 1134.

**Antipepsin** (DEZANI), A., ii, 621.

**Antipeumin** (BATTELLI and STERN), A., ii, 1008.

**Anti-protease** from bacteria (MEYER), A., i, 512.

**Antipyrine** (*1-phenyl-2:3-dimethylpyrazolone*), compound of, with ferric chloride (ASTRE and VIDAL), A., i, 814.  
 compounds of, with tin chlorides (ASTRE and VIDAL), A., i, 399.  
 fusion of, with toluenesulphonamides (VOSWINKEL), A., i, 498.

**Antipyrine**, *o*- and *m*-amino-, *m*- and *p*-4-diamino-, *m*- and *p*-benzoyl-amino-, 4-bromo-*m*- and *p*-acetyl-amino-, 4-bromo-*p*-benzoylaminio-, 4-bromo-*m*- and *p*-nitro-, *o*-, *m*- and *p*-nitro-, 4-nitro-, 4-nitroso-, *p*-acetylaminio-, 4-nitroso-*p*-benzoyl-amino-, and their salts and derivatives (MICHAELIS, GRAFF, GESING, and BOIE), A., i, 233.  
 influence of, on the proteins of blood-serum (CERVELLO), A., ii, 409.  
 estimation of, iodometrically, in mi-grainine (SLEESWYK), A., ii, 80.

**Antiseptics**, influence of, on the antolysis of yeast (NAVASSART), A., ii, 640.  
 of urine, action of (JORDAN), A., ii, 218.

**Antithrombin**, hepatic, isolation and extraction of (DOYON, MOREL, and POLICARD), A., ii, 216.  
 passage of the, into the blood (DOYON, MOREL, and POLICARD), A., ii, 409.

**Aorta**, atheromatous, chemistry of the (SELIG : AMESEDER : v. ZEYNEK), A., ii, 219.

**Apatite** (CAMERON and McCaughey), A., ii, 734.  
 artificial, crystallography of (DE SCHULTEN), A., ii, 615.

*iso***Apiole**, additive compounds of, with picryl chloride and *s*-trinitrotoluene crystallography of (BOERIS), A., i, 290.

**Apophyllite** (SMITH), A., ii, 501.

**Apparatus** for carrying out chemical reactions (SPITALSKY), A., ii, 225.  
 for preserving and measuring poisonous, hygroscopic or low-boiling liquids (STEINKOPF), A., ii, 106.  
 for showing the formation of nitrogen compounds from atmospheric air (VAN ERP), A., ii, 35.

**Apples**, constituents of (THOMAE), A., ii, 920.  
 composition of seeds of (HUBER), A., ii, 1024.

**Aqua regia** as an oxidising agent (MOORE), A., ii, 719.  
 solution of gold in (PŘIWOZNÍK), A., ii, 484.

**Aragonite**, transformation of, into calcite (LASCHTSCHENKO), A., ii, 886.

**Aragonite**, colour reactions of (THUGUTT), A., ii, 334.

*Araucaria cunninghamii*, constituents of (BAKER and SMITH), A., i, 479.

**Arbutin** in pear-tree leaves (BOURQUELOT and FICHTENHOLZ), A., i, 803.  
 in pear leaves and its function in producing autumn tints (BOURQUELOT and FICHTENHOLZ), A., ii, 143.  
 detection of, in plants (TUNMANN), A., ii, 669.

**Arc.** See under Electrochemistry.

**Arecoline**, reactions of (REICHARD), A., ii, 778.

**Arginine**, degradation of, in plants (KIESEL), A., ii, 1124.  
 salts of (WEISS), A., i, 667.  
 nitro- (KOSSEL and KENNAWAY), A., i, 668.

**Argon**, fractional crystallisation and atomic weight of (FISCHER and FROBOESE), A., ii, 202.  
 spectrum of (STAHL), A., ii, 449.  
 critical density and isotherms of (CROMMELIN), A., ii, 202 ; (ONNES and CROMMELIN), A., ii, 203, 467.  
 content of gases from springs (WALTER), A., ii, 280.  
 ratio of krypton to, in natural gaseous mixtures (MOUREU and LEPAPE), A., ii, 392.  
 ratio of, to nitrogen, in natural gaseous mixtures (MOUREU and LEPAPE), A., ii, 602.

**Argon group**, physical contents of gases of the (CUTHBERTSON), A., ii, 108.  
 dielectric cohesion of the gases of the (BOUTY), A., ii, 458.  
 viscosity of gases of the (REINGANUM), A., ii, 858.  
 gases of the, relation between atomic weight and viscosity for (RANKINE), A., ii, 87.

**Aristolochiaceæ**, sucrose in the roots of (LESUEUR), A., ii, 525.

**Aromatic compounds**, reduction of, by Sabatier's method (SKITA and RITTER), A., i, 272.  
 introduction of phthalic acid groups into (SCHOLL and SEER), A., i, 557 ; (SCHOLL and NEOVIUS), A., i, 567.  
 relation of the velocity of chlorination of, to constitution (ORTON and KING), T., 1869, 1377 ; P., 196.  
 as cholagogues (PETROWA), A., ii, 1010.  
 solid, emission spectra of (GOLDSTEIN), A., ii, 560.

**Arsanilic acid.** See Phenylarsinic acid, *p*-amino-.

**Arsenic** in marine algae (TASSILLY and LEROIDE), A., ii, 142.  
 allotropic modifications of (JOLIBOIS), A., ii, 720.  
 adsorption of, by aluminium hydroxide (LOCKEMANN and PAUCKE), A., ii, 720.  
 absorption of, by beetroot (REMMLER), A., ii, 919.  
 adsorption of, by ferric hydroxide (LOCKEMANN), A., ii, 485.  
 compounds of, with manganese (ARRIVAUT), A., ii, 399.  
 compounds of, with tin (JOLIBOIS and DUPUX), A., ii, 612; (PARRAVANO and DE CESARIS), A., ii, 613.  
 action of, on red blood corpuscles (ONAKA), A., ii, 212.  
 excretion of, in urine, after use of dihydroxydiaminoarsenobenzene (GREVEN), A., ii, 511.

**Arsenic alloys** with mercury, preparation of (DUMESNIL), A., ii, 403.

**Arsenic compounds**, germicidal action of, on *Bacillus typhosus* (MORGAN and COOPER), A., ii, 519.  
 influence of, on the fermentation of sugars by yeast (HARDEN and YOUNG), A., ii, 519.  
 toxicity of (LAUNOY), A., ii, 60.  
 trichloride, latent heat of fusion of (TOLŁOCZKO and MEYER), A., ii, 187.  
 hydride, solid, composition of (RECK-LEBEN and SCHEIBER), A., ii, 390.

**Arsenious oxide**, oxidation of (TINGLE), A., ii, 1086.

**Arsenic acid**, hydrates of (BALAREFF), A., ii, 798.

**Arsenides**, preparation of (HILPERT and DIECKMANN), A., ii, 985.

**Arsenic**, detection of, in cases of poisoning (PEDRAZZINI), A., ii, 438.  
 detection and estimation of, in organic compounds (BRESSANIN), A., ii, 1133.  
 detection, separation, and estimation of, and antimony (BRESSANIN), A., ii, 1134.  
 detection and separation of (SALKOWSKI), A., ii, 153.  
 estimation of, in arsenical greens (HEIDUSCHKA and REUSS), A., ii, 438.  
 estimation of, in mineral waters (AGENO and GUICCIARDINI), A., ii, 769.  
 estimation of, in organic substances (LOCKEMANN), A., ii, 1026.  
 estimation of, in pyrites (HATTEN-SAUR), A., ii, 1028.  
 estimation of, in toxicological analysis (NEY), A., ii, 932.

**Arsenic**, estimation of, in urine (HEIDUSCHKA and BIÉCHY), A., ii, 537.

**Arsenides**. See under Arsenic.

**Arsenobenzene**, *pp'*-diamino-, and its salts (EHRLICH, BERTHEIM, and SCHMITZ), A., i, 594.  
*diaminodihydroxy*, excretion of arsenic in urine after the use of (GREVEN), A., ii, 511.  
 detection of (ABELIN), A., ii, 948.  
 hydrochloride. See Salvarsan.

**Arsenomolybdcic acid**, guanidium salt of (ROSENHEIM and PINSKER), A., i, 266.

**Arsenophenols**, *tetrabromo*-, *tetrachloro*-, and *tetraiodo*- (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), A., i, 1055.

**Arsenophenylglycine**, action of, in trypanosome infections in rabbits (BROWNING and MCKENZIE), A., ii, 59, 219.

**Artemisinphenylhydrazone** (BERTOLO), A., i, 898.

**Arteries**, fat in the coats of (KLOTZ and MANNING), A., ii, 1112.  
 surviving, reactions of (Cow), A., ii, 413.

**Arylamines**, synthesis of (MAILHE and MURAT), A., i, 535.

**Arylarsinic acids**, nitrohydroxy-, preparation of (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), A., i, 1056.

**Arylazoacetonedicarboxylic acid**, ethyl esters, and their condensation products with hydrazines (BÜLOW and GOLLER), A., i, 1043.

**Arylnitrosohydroxylamines**, relation between bisnitroso-compounds and (BAMBERGER), A., i, 996.

**Arylsulphodiazocimino-derivatives**, preparation of (AKTIEN-GESELLSCHAFT FÜR ANILIN-FABRIKATION), A., i, 509.

**Arylsulphon-anilides**, and *p*-naphthalides, amino-derivatives of (MORGAN and MICKLETHWAIT), P., 326.

**Arylsulphonyl chlorides**, action of ethyl alcohol on (GOUBAU), A., i, 433.

**Arylxanthenols**, hydroxy-, action of halogen acids on (GÖMBERG and WEST), A., i, 737.

**Asarum europaeum**, presence of a glucoside in the roots of (LESUEUR), A., ii, 525.

**Asbestos**, use of, in the filtration of permanganate (TSCHEISHWILI), A., ii, 43.

**Ascaridole glycol**, and its benzoates (NELSON), A., i, 797.

**Ascaris lumbricoides**, a glucose-protein in (McCRUDDEN), A., ii, 415.

**Ascites**, chylous and pseudo-chylous (WALLIS and SCHÖLBERG), A., ii, 512.

**Asclepiac acid** (MASSON), A., ii, 761.

*Asclepias vincetoxicum*, composition of the root of (MASSON), A., ii, 761.

**Ascidians' blood**. See Blood.

**Ash**, analysis of (STOLTE), A., ii, 946. accurate estimation of, from vegetable and animal matter (FLEURENT), A., ii, 445.

**Asparagine**, use of, in the production of milk (MORGEN, BEYER, and WESTHAUSSER), A., ii, 751.

complex chromium, derivative of (TSCHUGAEFF and SERBIN), A., i, 116.

**Asparagine dithiocarboxylic acid**, benzyl hydrogen ester of, and its barium salt (SIEGFRIED and WEIDENHAUPT), A., i, 117.

**Asparagus**, constituents of the roots of (MORSE), A., ii, 324.

**Aspartic acid**, action of putrefactive bacteria on (ACKERMANN), A., ii, 757.

*Aspergillus niger*, influence of manganese on the development of (BERTRAND and JAVILLIER), A., ii, 222. influence of zinc and manganese on the development of (BERTRAND and JAVILLIER), A., ii, 421, 644.

utilisation of aucubin by (HERISSEY and LEVAS), A., ii, 759.

assimilation of phosphorus by (Dox), A., ii, 914.

inulinase in (BOSELLI), A., ii, 1022.

**Asphyxia**, action of, on the spinal animal (MATHISON), A., ii, 123. effect of, on the vaso-motor centre (MATHISON), A., ii, 617.

**Assimilation** of plants. See Plant assimilation.

**Aster**, woody, chemical examination of (RAIFORD), A., ii, 820.

**Asymmetry** in the supposed absence of an asymmetric atom (MARSH), P., 317.

**Atacamite** (UNGEMACH), A., ii, 1100.

**Atmosphere**, constituents of the upper layers of the (WEGENER), A., i, 271, 387. estimation of the degree of vitiation in an (HENRIET and BOUYSY), A., ii, 532.

**Atmospheric air**, line spectrum of (HEM-SALECH), A., ii, 449, 558. ultra-violet spark spectrum of (WAGNER), A., ii, 829.

ionisation of (EVE), A., ii, 89.

radioactivity of, over the sea (RUNGE), A., ii, 1050.

mineral constituents of the dust in (HARTLEY), A., ii, 558.

C. ii.

**Atmospheric air**, amount of carbon dioxide in, at Monte Video (SCHRÖDER), A., ii, 1086.

apparatus for showing the formation of nitrogen compounds from (VAN ERP), A., ii, 35.

formation of oxidising agents in, by means of ultra-violet light (CHLOPIN), A., ii, 717.

expired, amount of carbon dioxide in, in town and country (THOMSON), A., ii, 408.

protein, cleavage products in (WEICHHARDT), A., ii, 993.

liquid and solid, apparatus for the preparation of small quantities of (BAMBERGER), A., ii, 106.

of laboratories (HABERMANN, KULKA, and HOMMA), A., ii, 315.

expired, estimation of, in man (DOUGLAS), A., ii, 653.

estimation of oxygen in, volumetrically (WATSON), T., 1460; P., 135.

**Atom**, structure of the (RUTHERFORD), A., ii, 453.

number of electrons in the (WILSON), A., ii, 593.

**Atoms**, magnetic moments of (WEISS), A., ii, 183.

determination of the law of attraction between (KLEEMAN), A., ii, 97.

**Atomic heat**. See under Thermochemistry.

**Atomic theory**, development of the (MELDRUM), A., ii, 267, 708.

**Atomic weight** and viscosity of the inert gases, relation between (RANKINE), A., ii, 87.

of argon (FISCHER and FROBOESE), A., ii, 202.

of cadmium (PERDUE and HULETT), A., ii, 397.

of calcium (RICHARDS and HÖNIG-SCHMID), A., ii, 112, 204.

of chlorine and of bromine, determined by electrolytic methods (GOLDBAUM), A., ii, 271.

of hydrogen (HINRICHs), A., ii, 977.

of iodine and silver (BAXTER), A., ii, 112.

of iron (BAXTER, THORVALDSON, and COBB), A., ii, 287; (BAXTER and THORVALDSON), A., ii, 288.

of neodymium (BAXTER and CHAPIN), A., ii, 285.

of nitrogen relative to that of sulphur (BURT and USHER), A., ii, 389.

of phosphorus (PORTER and OVITZ), A., ii, 201.

of tantalum (CHAPIN and SMITH), A., ii, 899.

of vanadium (MCADAM), A., ii, 117.

**Atomic weights**, relationships between (LORING), A., ii, 197.  
**Johnstone Stoney's law of (RAYLEIGH)**, A., ii, 874.  
 table of, T., 1870 ; P., 205.  
 report of the International Committee on, T., 1867 ; P., 202.  
 of the dominant elements (HINRICHSS), A., ii, 1080.

**Atomic weight values**, repeating figures in (LOEWEN), A., ii, 197.

**Atophan**. See Phenylcinchonic acid.

**Atoxyl (sodium p-aminophenylarsinate)** (BLUMENTHAL and NAVASSART), A., ii, 636.

**Atropamide** (STAUDINGER and RUŽIČKA), A., i, 463.

**Atropic acid**, ethyl ester (AUWERS and EISENLOHR), A., ii, 783.  
 p-toluidide of (STAUDINGER and RUŽIČKA), A., i, 463.

**α-isoAtropic acid**, p-toluidide of (STAUDINGER and RUŽIČKA), A., i, 463.

**Atropine**, salts of (GERBER), A., i, 152.  
 silicotungstate (JAVILLIER), A., i, 152.  
 estimation of (JAVILLIER), A., ii, 551.

**Aucubin**, occurrence of, in *Garrya* (HERISSEY and LEBAS), A., ii, 63.  
 utilisation of, by *Aspergillus niger* (HERISSEY and LEBAS), A., ii, 759.

**Auramine**, constitution and derivatives of (SEMPER), A., i, 577.

**Auric hydroxide**. See under Gold.

**Autolysis**, study of (CHIARI), A., ii, 307.  
 influence of salt ions on (BRÜLL), A., ii, 54.

**Autoxidation**. See under Oxidation.

**Autunite**, presence of helium in (PIUTTI), A., ii, 565.

**Avian tissues**, indophenol oxydase of (VERNON), A., ii, 905.

**Azafran**, colouring-matter from the root of (LIEBERMANN), A., i, 391.

**Azafrin** (LIEBERMANN), A., i, 391.

**Azides**, complex (MELDOLA and KUNTZEN), T., 36.

**4:5-Azimino-2-aceto-o-toluidide** and its derivatives (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 928.

**Aziminophenylarsinic acid** (BERTHEIM), A., i, 1055.

**Azines**, preparation of (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 504.  
 conversion of, into semicarbazones (KNÖPFER), A., i, 1033.

**Azinetriphenylpyrrole**, researches on (ANGELICO), A., i, 1032.

**Azo-acids**, o-substituted, preparation of (FREUNDLER), A., i, 757.

**Azoanilopyrine**. See 2:5-*endo*Anilo-1-azophenyl-2:3-dimethylpyrazole.

**Azobenzene**, p-nitro- (ANGELI and ALESSANDRI), A., i, 817.  
 2:4:6:4'-tetraniitro- (CIUSA), A., i, 931.  
 2:6-dinitro-4'-hydroxy-, and 2:6:4'-trinitro- (BORSCHE and RANTSCHEFF), A., i, 331.

**Azo-colouring matters** (COHN), A., i, 929 ; (KYM and KOWARSKI), A., i, 1044.  
 action of sodium sulphite and hydrogen sulphite on (LEPETIT and LEVI), A., i, 930.  
 hydroxy-, stability to light of methylated (VOROSCHCOFF), A., i, 340.

**Azo-compounds**, preparation of (STOLLÉ and LAUX), A., i, 508.  
 complex (MELDOLA and KUNTZEN), T., 36.  
 molecular refraction of (DUVAL), A., ii, 1041.  
 thermochemical studies of (SVENTO-SLAVSKY), A., ii, 967.  
 distribution of auxochromes in (KAUFFMANN and KUGEL), A., i, 930.  
 hydroxy- (AUWERS, DANNEHL, and BOENNECKE), A., i, 168.

**Azodicarboxylic acids**, ethyl and methyl esters, and their derivatives (DIELS and FRITZSCHE), A., i, 957.

**2:2'-Azoethoxylactanilide** (ELBS, METTE, and SCHUSTER), A., i, 193.

**5-Azo-8-hydroxyquinoline** (COHN), A., i, 567.

**Azoinide** (*hydrazoic acid* : *hydronitric acid*) constitution of (THIELE), A., i, 845.  
 electrochemistry of, and its salts (TURRENTINE), A., ii, 693.  
 action of, on carbylamines (OLIVERI-MANDALÀ and ALAGNA), A., i, 243.  
 condensation of, with ethyl cyanoformate and with cyanogen bromide (OLIVERI-MANDALÀ), A., i, 337.  
 oxidation of (RIEGGER), A., ii, 978.

**Azo-1:2-methylenedioxobenzene**, amino- (MAMELI), A., i, 510.

**Azo-p-phenetidine** (ELBS, METTE, and SCHUSTER), A., i, 193.

**Azopyrazolones**, preparation of (BÜLOW and HECKING), A., i, 403.

**Azosolanidine** (ODDO and BUZIO), A., i, 672.

**Azosolanine** (ODDO and CAESARIS), A., i, 671.

**Azo-p-tolil** (*p-toluoyl-p-tolylazomethylene*) (CURTIUS and KASTNER), A., i, 325.

**p-Azoxyanisole** and *p*-azoxyphenetole, viscosity of mixtures of (PICK), A., ii, 858.

*oo'-Azoxybenzaldehyde* diethyl and dimethyl acetals (BÄMBERGER), A., i, 694.

**Azoxybenzene**, and 4:4'-dinitro-, bromo-derivatives (ANGELI and ALESSANDRI), A., i, 1045.

**Azoxy-compounds**, structure of (ANGELI and ALESSANDRI), A., i, 817.

action of phosphorus pentachloride on (CHARRIER and FERRERI), A., i, 1045.

**3:3'-Azoxylacto-p-toluidide** (ELBS and SCHUSTER), A., i, 192.

**p-Azoxyphenetole**, crystalline-liquid phase of (WULFF), A., ii, 593.

and *p*-azoxyanisole, viscosity of mixtures of (PICK), A., ii, 858.

**Azoxyphenyl methyl sulphone** (ZINCKE and JÖRG), A., i, 286.

**3:3'-Azoxy-p-toluidine** (ELBS and SCHUSTER), A., i, 192.

## B.

**Bababudanite**, a variety of riebeckite, from Mysore (SMEETH), A., ii, 737.

**Babbitt metal**, analysis of (WALKER and WHITMAN), A., ii, 442.

**Bacilli**, formation of dextrans from starch by (SCHARDINGER), A., i, 181.

diphtheria, production of acid and alkali by (JACOBSEN), A., ii, 139.

dysentery, action of, on nitrates and nitrites (LOGIE), A., ii, 1121.

of the *Proteus* group, carbohydrate metabolism of (GLENN), A., ii, 639.

**Bacillus anthracis**, proteolytic power of (BIELECKI), A., ii, 758.

*bulgaricus*, lactic acid produced by (CURRIE), A., ii, 1018.

*kiliense*, fermentation of formic acid by (FRANZEN and GREVE), A., ii, 60.

*lactis aërogenes*, action of, on sugars (WALPOLE), A., ii, 318.

*streptococcus*, differentiation of (BEATTIE and YATES), A., ii, 1019, 1122.

*typhosus*, germicidal action of arsenic and antimony compounds on (MORGAN and COOPER), A., ii, 519.

**Bacteria**, action of alcohols on (BOKORNY), A., ii, 522.

anti-agglutination by (WEIL), A., ii, 619.

putrefactive, action of, on aspartic acid (ACKERMANN), A., ii, 757.

fat-splitting by (SÖHNGEN), A., ii, 319.

production of lipase by (SÖHNGEN), A., ii, 639.

**Bacteria**, changes produced in milk by (SCHÖLBERG and WALLIS), A., ii, 512.

reduction of nitrates to nitrites by (PELZ), A., ii, 139.

nitrogen metabolism by (BOEHNCKE), A., ii, 638.

pigments from oxidation by (BEYER-INCCK), A., ii, 518.

oxidation of phenol by (FOWLER, ARDERN, and LOCKETT), A., ii, 139.

action of, on proteins (BAINBRIDGE), A., ii, 1121.

splitting of the pyrrolidine ring by (ACKERMANN), A., i, 808.

proteases and anti-proteases from (MEYER), A., i, 511, 512.

influence of strychnine on (SADIKOFF), A., ii, 1018.

injurious, in soils (EMMERICH, LEININGER, and LOEW), A., ii, 430.

decomposition of sugars by (MENDEL), A., ii, 318.

thermophilic, assimilation of atmospheric nitrogen by (PRINGSHEIM), A., ii, 916.

water, decomposition by (SPÄT), A., ii, 1121.

**Bacterium prodigiosum**, formation of trimethylamine by (ACKERMANN and SCHÜTZE), A., ii, 61.

*savastanoi*, formation of *d*-gluconic acid by (ALSBERG), A., ii, 317.

See also *Bacillus*, Fermentation, and Yeast.

**Balance Sheets** of the Chemical Society and of the Research Fund. See Annual General Meeting, T., 577; P., 77.

**Balanophorin** (SIMON), A., i, 391.

**Bamboo** shoots, components of (TOTANI), A., ii, 222.

content and distribution of hydrocyanic acid in the (WALTER, KRASNÖSEL-SKAYA, MAKSIMOFF, and MAL-SCHEWSKY), A., ii, 525.

**Bananas**, composition of (YOSHIMURA), A., ii, 526.

**Barbituric acid**, preparation of alkylthio-derivatives of (MERCK), A., i, 683.

**Barium** in soils (FAILYER), A., ii, 146.

salts, action of, on the heart (ROTHBERGER and WINTERBERG; WERSCHININ), A., ii, 1117.

chloride, monohydrate of (KIRSCHNER), A., ii, 396.

hydroxide, action of, on dextrose and galactose (UPSON), A., i, 423.

potassium orthothioantimonate (GLATZEL), A., ii, 980.

orthothioarsenate (GLATZEL), A., ii, 282.

**Barium** oxide, as a reducing agent (ZEREWITINOFF and v. OSTROMIS-SLENSKY), A., i, 849.  
**potassium orthothioarsenate** (GLATZEL), A., ii, 801.  
**sodium phosphate** (QUARTAROLI), A., ii, 489.  
**rhodobromide** (GOLOUBKINE), A., ii, 45.  
**sulphate**, artificial crystallisation of (COOPER, FULLER, and KLEIN), A., ii, 726.  
**plasticity** of (ATTERBERG), A., ii, 605; (EHRENBERG), A., ii, 972.  
**occlusion** in precipitates of (JOHNSON and ADAMS), A., ii, 766.

**Barium**, detection of strontium, calcium, and lead (BROWNING and BLUMENTHAL), A., ii, 1032.  
 estimation of, qualitatively (CURTMAN and FRANKEL), A., ii, 659.  
 separation and estimation of (GOOCH and BOYNTON), A., ii, 334.  
 separation of strontium, calcium and (HORN VAN DEN Bos), A., ii, 228; (BIRNBÄUER), A., ii, 770.

**Barley**, constituents of the glumes of (GEYS), A., ii, 529.  
 formation of hordenine during the germination of (TORQUATI), A., ii, 523.  
 influence of soil on the root development of (POLLE), A., ii, 224.  
 utilisation of the proteins of (MENDEL and FINE), A., ii, 1109.

**Barytes** from the Freiburg district (HENGLEIN), A., ii, 902.  
 specific heat of (LASCHTSCHENKO), A., ii, 253.  
 crystallography of (KOLB), A., ii, 295.  
 artificial, crystal forms of (GERHART), A., ii, 262.

**Base**,  $C_7H_{15}N$  from  $\epsilon$ -hydroxy- $\gamma$ -methylhexylamine and hydrobromic acid, and its oxalate (WOHL and MAAG), A., i, 25.

$C_{10}H_{18}N_2$  from methyl  $\beta$ -aminoisopropyl ketone, and its salts (GABRIEL), A., i, 213.

$C_{11}H_{12}O_2N_2$  from 2-keto-3-methyl-imino-5-phenylpyrrolidine hydrochloride (MUMM and MÜNCHMEYER), A., i, 80.

$C_{12}H_{16}N_2$  from *Withania somnifera* and its salts (POWER and SALWAY), T., 496; P., 53.

$C_{13}H_{16}O_2N_2$  from chlorogyrilone (GABRIEL), A., i, 229.

$C_{19}H_{17}ON$  from 2-ethylquinoline (VONGERICHTEN and RÖTTA), A., i, 677.

$C_{19}H_{16}ONCl$  from 2-ethylquinoline (VONGERICHTEN and RÖTTA), A., i, 677.

**Bases**, organic, compounds of, with diiodoacetylene (DEHN), A., i, 829.  
 physiological action of (BRISSEMORET and JOANIN), A., ii, 137.  
 action of carbon tetrabromide on (DEHN and DEWEY), A., i, 914.  
 tertiary, action of, on sulphonyl chlorides (WEDEKIND and SCHENCK), A., i, 190.  
 cyclic, velocity of addition of alkyl bromides to (LONG), T., 2164; P., 283.  
 weak, polarimetric determination of avidity of (RIMBACH and VOLK), A., ii, 869.

**Bauxite** (GAUTIER), A., ii, 497.

**Bebeerine** methiodide methyl ether (SCHOLTZ), A., i, 913.

**Beckmann** rearrangement (KUHARA and TODO), A., i, 213; (SCHROETER), A., i, 505; (HENRICH), A., i, 650.

**Beef**, new leucomaine from (CORREAL), A., i, 396.

**Beer**, solubility of carbon dioxide in (FINDLAY and SHEN), T., 1313; P., 189.  
 cause of the separation of albumin in (EMSLANDER), A., i, 935.

**Bees**, mineral composition of (ARONS-SOHN), A., ii, 509.  
 inversion of sucrose by (KORNDOERFER), A., ii, 1008.

**Beetroot** (sugar), occurrence of starch in the roots of (PEKLO), A., ii, 763.  
 influence of light on the composition of (STROHMER, BRIEM, and FAL-LADA), A., ii, 763.  
 absorption of arsenic by (REMMLER), A., ii, 919.

manurial experiments with (SAIL-LARD), A., ii, 145; (GRAFTIAU), A., ii, 648.

nitrogenous manures for (ERBEN, PRACHFELD, and VILIKOVSKY), A., ii, 65.

estimation of sugar in (OGILVIE), A., ii, 232; (STROHMER and FALLADA), A., ii, 427.

**Behenic acid**, iodo-, guaiacol ester of (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 630.

**Behenyl chloride**, *di*-iodo- (HOFFMANN-LA ROCHE & Co.), A., i, 601.

**Behenyl chloride**, iodo- (ABDERHALDEN, HIRSCH, and GUGGENHEIM), A., i, 955.

**Behenylglycine**, iodo- (ABDERHALDEN, HIRSCH, and GUGGENHEIM), A., i, 955.

**Belladonna**, extract of (DANCKWORTT), A., ii, 644.

**Benzaldehyde**, solutions of, in water (ROSENTHALER), A., i, 987.

**Benzaldehyde**, and hydrocyanic acid, solutions of, in water (WIRTH), A., i, 875.  
condensation of, with  $\omega$ -nitrotoluene (HEIM), A., i, 717.  
sulphites of the alkaloids (MAYER), A., i, 223.

**Benzaldehyde**, 3-chloro-2-hydroxy-(FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 459.  
*o*- and *p*-hydroxy-, action of cyano-acetic ester on (SCLAVI), A., i, 398.  
*m*-, and *p*-hydroxy-, dimethyl mercaptals and acetals and *o*-hydroxy-, dimethyl acetal (PAULY, V. BUTTLAR, and LOCKEMANN), A., i, 786.  
*o*-nitro-, preparation of (SOCIÉTÉ CHIMIQUE DES USINES DU RHÔNE), A., i, 987.  
*p*-nitrophenylhydrazone, and *o*-nitroso-, preparation of (BAMBERGER and FODOR), A., i, 60.

**Benzaldehydes**, separation and transformation of the (ERLENMEYER, HILDENDORFF, and MARX), A., i, 784.

**Benzaldehydecyanhydrin**, action of heat on a mixture of, and aniline (EVEREST and McCOMBIE), T., 1752; P., 218.

**Benzaldehydes**, *syn*-diphenylcarbonyl-oxime (DUNN), P., 239.

**Benzaldehyde**-*p*-methoxyphenylhydrazone (PAODA and SANTI), A., i, 1029.

**Benzaldehyde**-*m*-nitrophenylhydrazone,  $\omega$ -cyano-, and  $\omega$ -nitro- (PONZIO), A., i, 920.

**Benzaldehyde**-*o*-*p*-dinitrophenylhydrazone,  $\omega$ -nitro- (PONZIO), A., i, 920.

**Benzaldehydenitroso**-*p*-nitrophenylhydrazone,  $\omega$ -amino- (PONZIO and GASTALDI), A., i, 926.

**Benzaldehydophenylhydrazone**, labile, preparation of (THOLE), P., 278.

**$\alpha$ -Benzaldehydophenylhydrazone**, relation of, to other nitrogen compounds (CIUSA and PESTALOZZA), A., i, 678.

**Benzaldehyde**-2- and  $\beta$ -sulphonic acids, 4-hydroxy- (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 459.

**Benzamide**, esterification of (REID), A., i, 199.

**Benzamide**, *p*-amino-, acetyl derivative (BOGERT and WISE), A., i, 46.

**1,2-Benzanthraquinone**, 4-amino-, and 1- and 4-nitro- (SCHOLL and V. WOLODKOWITSCH), A., i, 889.

**Benzanthrene** and its picrate and 10-dibromo- (BALLY and SCHOLL), A., i, 676.

**Benzanthrone**, reduction of (BALLY and SCHOLL), A., i, 676.

**Benz-tert.-butylamide** (SCHROETER), A., i, 506.

**meso-Benzdianthrone**, 4:4'-dihydroxy, and its dibenzoate (SCHOLL and SEER), A., i, 454.

**Benzdithiophen** and its derivatives (LANFRY), A., i, 151.

**Benzene**, formula of (MOHR), A., i, 959.  
constitution of (FRY), A., i, 431; (LIFSHITZ), A., i, 622; (CHACÓN), A., ii, 1080.  
nucleus, orientation in the (OBERMILLER), A., i, 960.  
structure of, and reactivity of its substituents (OBERMILLER), A., i, 963.  
interpretation of the ultra-violet absorption spectrum of (FRY), A., i, 431.  
absorption of ultra-violet light by (GREBE), A., ii, 83.  
specific heat of, and of its saturated vapour (MILLS and MACRAE), A., ii, 187.  
solubility of water in (GROSCHUFF), A., ii, 595.

action of aluminium chloride on (HOMER), A., i, 276.

action of cyclopropanecarboxylic acid chloroanhydride on, in presence of aluminium chloride (KIJNER), A. i, 989.

compounds of, with antimony tribromide and trichloride (MENSCHUTKIN), A., i, 273, 274.

sulphonation of (SCHEIBER, RECKLEBEN, and STRAUSS), A., i, 189.

and chloro-, action of sulphur monochloride on (BÖESEKEN and KONING), A., i, 532.

action of sulphuric acid on *p*-nitroso-derivatives of (BAMBERGER and HAM), A., i, 684.

chain, gradual synthesis of the (DELACRE), A., i, 32.

derivatives, absorption spectra of (CRYMBLE, STEWART, WRIGHT, and GLENDINNING), T., 451; P., 46.

absorption spectra and constitution of (WALIASCHKO), A., ii, 2.

physical properties of mixtures of *p*-dihalogen (NAGORNOFF), A., i, 27; (NAGORNOFF, SCHEMITSCHNY, and KURNAKOFF), A., ii, 18.

containing chlorine and bromine, absorption spectra of (PURVIS), T., 1699; P., 218.

containing iodine, absorption spectra of (PURVIS), T., 2318; P., 280.

containing oxygen, compounds of, with halogen acids (MAASS and MCINTOSH), A., i, 289.

**Benzene**, estimation of the halogens in (MARYOTT), A., ii, 66.  
 nucleus, equivalence of positions in the (WOHL), A., i, 57.  
 configuration of (VAUBEL ; LIFSCHTZ), A., i, 774.  
 substitution in the (HOLLEMAN), A., i, 713.

**Benzene**, bromo-, and chloro-, absorption spectra of, as vapours, liquids and in solution (PURVIS), T., 811 ; P., 71.  
 $p$ -dibromo-, condensation of, with xanthone (CONE and WEST), A., i, 805.  
 chloro-, and *o*-, *m*-, and *p*-dichloro-, absorption spectra of (BALY), T., 856 ; P., 72.  
 1-chloro-2:6-dinitro- (BORSCHE and RANTSCHEFF), A., i, 329.  
 nitro-, measurement of the magnetic double refraction of (COTTON and MOUTON), A., ii, 4.  
 equilibrium of condensation of carbon dioxide with (KOHNSTAMM and REEDERS), A., ii, 1077.  
 conductivity of solutions of aluminum bromide in (PLOTNIKOFF), A., ii, 247.  
 reduction of (ZEREWITINOFF and v. OSTROMISSLENSKY), A., i, 849.  
 $m$ -dinitro-, additive compounds of (VAN ROMBURGH), A., i, 622.  
 2:4:6-trinitro-, preparation of (MEYER), A., i, 848.  
 additive compounds of phenols and phenolic ethers with (SUDBOROUGH and BEARD), T., 212 ; P., 5.

**Benzenes**, dinitrohydroxy-, preparation of salts of the (SHAW), P., 14.

Benzeneazo-4-amino-1:2-methylene-dioxybenzene (MAMELI), A., i, 510.

2-Benzeneazo-5-bromobenzoic acid (FREUNDLER), A., i, 758.

Benzeneazocarbonylcoumaranone and its silver derivative and phenylhydrazone (MERRIMAN), T., 914 ; P., 102.

2-Benzeneazo-5-chlorobenzoic acid and its barium salt and methyl ester (FREUNDLER), A., i, 757.

Benzeneazo-3:5-dichlorobenzoic acid and its salts and derivatives (FREUNDLER), A., i, 577, 815.

4-Benzeneazo-*m*-cresol (MC PHERSON and BOORD), A., i, 818.

0-Benzeneazodiacytlybenzoylmethane (AUWERS, DANNEHL, and BOENNECKE), A., i, 172.

4-Benzeneazo-5-hydroxy-3-methyliso-oxazole, and its silver salt, and 4-*p*-nitro-, and 4-dinitro- (BÜLOW and HECKING), A., i, 244.

4-Benzeneazo-5-hydroxy-3-methyl-pyrazole, *p*-nitro-, and *op*-dinitro- (BÜLOW and HECKING), A., i, 404.

4-Benzeneazo-5-hydroxy-1-phenyl-3-methylpyrazole, benzoyl derivative of (AUWERS, DANNEHL, and BOENNECKE), A., i, 170.  
 $p$ -nitro-, and *op*-dinitro- (BÜLOW and HECKING), A., i, 404.

4-Benzeneazo-5-hydroxy-1-*op*-dinitro-phenyl-3-methylpyrazole (BÜLOW and HECKING), A., i, 404.

1-Benzeneazo-2-methoxythionaphthen (AUWERS and MÜLLER), A., i, 587.

5-Benzeneazo-4-methylamino-3:3'-dimethyl-4'-azo-*p*-dimethylaniline (RASSOW and BECKER), A., i, 932.

5-Benzeneazo-4-methylamino-3:3'-dimethylidiphenyl-4'-azo- $\beta$ -naphthol-(3:6)-disulphonic acid, sodium salt (RASSOW and BECKER), A., i, 933.

Benzeneazomorphine (WIELAND and KAPPELMEIER), A., i, 745.

Benzeneazo- $\beta$ -naphthol, *o*-hydroxy-, salts and derivatives (CHARRIER and FERRARI), A., i, 1046.

Benzeneazo- $\alpha$ -and  $\beta$ -naphthylsulphurous acids, salts of (VOROSCHTSOFF), A., i, 819.

3-Benzeneazo-2:5-dinitro-4-acetylaminophenol, and its sodium salt and *p*-nitro-, and their acetyl derivatives (MELDOLA and KUNTZEN), T., 40.

9-Benzeneazo-10-phenanthrol, and its acetate and benzoate (AUWERS, DANNEHL, and BOENNECKE), A., i, 169.

*o*-Benzeneazophenol, synthesis of, and *m*-amino-*o*-hydroxy-, acetyl derivative (VOROSCHTSOFF), A., i, 818.

Benzeneazophenyliminophenylmethane (BUSCH and RUPPENTHAL), A., i, 87.

4-Benzeneazo-3-phenylisooxazolone, *m*- and *p*-nitro- (MEYER), A., i, 341.

*p*-Benzeneazoresorcinol benzoate (KAUFFMANN and KUGEL), A., i, 930.

Benzeneazosalicylic acid, *p*-amino-, and its acetyl and diazo-derivatives (BÜLOW and HAAS), A., i, 339.

4-Benzeneazo-*m*-tolyl benzoate (MC PHERSON and BOORD), A., i, 818.

Benzeneazoxy-*o*-benzoic acid (FREUNDLER), A., i, 757.

Benzenediazonium *o*-nitrobenzenesulphinate, *o*-nitro- (CLAAZ), A., i, 695.

Benzenediazosulphone, *di*-*o*-nitro- (CLAAZ), A., i, 695.

**Benzenesulphinic acid**, 1-chloro-4-nitro-, and *o*-nitro-, and its sodium salt and ethyl ester (CLAASZ), A., i, 437.

**Benzenesulphon dibromo amide**, action of, with sulphuric acid (KASTLE), A., i, 361.

**Benzenesulphone**, *di-o-nitro-* (CLAASZ), A., i, 695.

**Benzenesulphonic acid**, isomorphous derivatives of (BRITISH ASSOCIATION REPORTS), A., i, 713.

  sulphonation of (POLAK), A., i, 30.

  organic salts of (SEYEWETZ and POIZAT), A., i, 360.

$\omega$ -dichloro-*o*-tolyl ester (RASCHIG), A., i, 637.

  2:3-*di*-iodo-, and its salts and derivatives, and 2:3:4:5-*tetra*iodo-, salts and derivatives, and 2-iodo-4-nitro-, potassium salt, and 2:3-*di*-iodo-5-nitro-, and its salts (BOYLE), T., 330; P., 9.

*p*-**Benzenesulphonylaminobenzonitrile** (BOGERT and WISE), A., i, 46.

*p*-**Benzenesulphonylaminophenyl-2:3-dimethyl-5-pyrazolone**, and 4-bromo-, and 4-nitroso- (MICHAELIS, GRAFF, GESING, and BOIE), A., i, 233.

**Benzenesulphonylanilide**, *p*-iodo- (ZINCE and JÖRG), A., i, 41.

**Benzenesulphonylauramine** and its compound with stannic chloride (SEMPER), A., i, 580.

**Benzenesulphonylmorphine** and its benzenesulphonate (WIELAND and KAPPELMEIER), A., i, 746.

**Benzene-1:2:4-tricarboxylic acid**. See Trimellitic acid.

**Benzhydrol**, *p*-amino-, compound of, with  $\beta$ -naphthaldehyde (TORREY and PORTER), A., i, 340.

3:5-*di*bromo-4-amino-, and its action with bromine (CLARKE and ESELEN), A., i, 725.

$\alpha$ -hydroxy-, and its penta-acetyl derivative (CROSS and BEVAN), T., 1455.

**Benzhydrol-4-azodimethylaniline** and its derivatives (TORREY and PORTER), A., i, 340.

**Benzhydrol-4-azo- $\beta$ -naphthol** (TORREY and PORTER), A., i, 340.

**Benzhydrol ether** (WEDEKIND and SCHENK), A., i, 190.

**Benzhydrylidenebenzocycloheptadiene** (STAUDINGER and KON), A., i, 879.

**Benzhydrylidenedimethylbenzocycloheptadiene** (STAUDINGER and KON), A., i, 879.

**Benzhydrylidenediphenylbenzocycloheptadiene** (STAUDINGER and KON), A., i, 879.

$\alpha$ -**Benzhydrylidenepentamethylene oxide** (STAUDINGER and KON), A., i, 879.

*o*-**Benzhydryltolhydrylbenzene** (GUYOT and VALLETTE), A., i, 652.

**Benzidine**, quinonoid salts of (MADELUNG), A., i, 323, 678; (PICCARD), A., i, 493.

  detection of bloodstains by means of (GIGLI), A., ii, 348.

2:2'-*di*chloro-5:5'-*dinitro-* (CHEMISCHE FABRIK GRIESHEIM-ELEKTRON), A., i, 493.

**Benzidinium** platinibromide (GUTBIER, BAURIEDEL, and OBERMAIER), A., i, 33.

**2-Benzidino- $\alpha$ -naphthoquinone** and *oo*'-dichloro-, and their derivatives (PUMMERER and BRASS), A., i, 655.

**Benzidylcamphoformeneamine** (TINGLE and BATES), A., i, 55.

**Benzilbenzoylphenylhydrazone** (AUWERS, DANNEHL, and BOENNECKE), A., i, 171.

**Benzilic acid**, decomposition of (STAUDINGER), A., i, 308.

**$\beta$ -Benzil-*m*-tolysazone** (PADOA and SANTI), A., i, 693.

**Benzimidazole oxide** and its salts (v. NIEMENTOWSKI), A., i, 85.

**Benzimidazolonearsinic acid** (BERTHEIM), A., i, 1056.

**Benziminosulphide** and its salts and acetyl derivative (MATSUI), A., i, 201.

*α*-**Benzoacetylaminopyridine** (PALAZZO and TAMBURINI), A., i, 327.

**Benzo-*n*-amylamide** (v. BRAUN and SOBECKI), A., i, 128.

**Benzoarsine** dichloride, quinine ester of (OECHSLIN), A., i, 760.

**Benzoarsinic acid**, quinine ester of (OECHSLIN), A., i, 760.

**$\beta$ -Benzoglucose**, bromo- (FISCHER and HELFERICH), A., i, 803.

**Benzoic *o*-acetoxybenzoic anhydride** (EINHORN and SEUFFERT), A., i, 54.

**Benzoic acid**, preparation of (SABATIER and MAILHE), A., i, 258.

  hydrobromide (MAASS and McINTOSH), A., i, 289.

  copper salt, compounds of, with pyridine and quinoline (BRADY), P., 94.

*tert*-butyl ester (PFANNL), A., i, 783.

$\omega$ -dichloro-*m*-tolyl ester (RASCHIG), A., i, 637.

**Benzoic acid, *o*-amino-**. See Anthranilic acid.

*p*-amino- and its acetyl derivative, benzoylmethyl esters of (KUNCKELL), A., i, 990.

  ethyl ester, glycinamide of (EINHORN and SEUFFERT), A., i, 45.

**Benzoinic acid**, 2:3:5-*tribromo*-, methyl ester (ULLMANN and KOPE-TSCHNI), A., i, 292.

2:5-*dibromo*-4-amino- (KUNCKELL), A., i, 990.

2:6-*dibromo*-4-amino-, acetyl derivative, *m*-tolyl and 4-chloro-6-benzoyl amino-*m*-tolyl esters (RAIFORD), A., i, 993.

fluoro-, and iodo-, methyl esters of, and their rotation (COHEN), T., 1058; P., 123.

*p*-hydroxy-, potassium salt, crystallography of (ROSATI), A., i, 864.

methyl ester chlorocarbonate (EINHORN and ROTHLAUF), A., i, 705.

*di-m*-hydroxy- (FISCHER, FREUDENBERG, and LEPSIUS), A., i, 875.

*tri*hydroxy- (v. HEMMELMAYR), A., i, 983.

3:5-*dinitro*-4-hydroxy-, compounds of, with aromatic hydrocarbons (MORGENSTERN), A., i, 976.

*dithio*- (*phenylcarbithionic acid*), salts and esters of (HÖHN and BLOCH), A., i, 48.

**Benzoinic acid**, detection of, in butter and other fats (FRIESE), A., ii, 1142.

detection of, in foods (POLENSKE), A., ii, 1142.

estimation of (FOLIN and FLANDERS), A., ii, 1039.

**Benzoinic acids**, hydroxy-, oxidation products of (PERKIN), T., 1442; P., 194.

nitro-, preparation of (LÜTTGEN), A., i, 128.

**Benzoinic *o*-benzoyloxybenzoic anhydride** (EINHORN and SEUFFERT), A., i, 54.

**o**-**Benzoinic sulphimide**, action of chlorine on (BERTOLO), A., i, 858.

See also "Saccharin."

**Benzoin mononitrate** (FRANCIS and KEANE), T., 348; P., 44.

**1-Benzo- $\beta$ -naphthindole-3-sulphonic acid**, 1-hydroxy- (KALLE & Co.), A., i, 917.

**Benzonitrile**, condensation of thiobenzamide with (MATSUI), A., i, 201.

**Benzonitrile**, *p*-amino-, benzoyl and formyl derivatives, 3:4-*diamino*-, 3-nitro-4-amino-, and its acetyl derivative (BOGERT and WISE), A., i, 46.

**Benzophenone**, action of acids and ethers with (PATERNÒ and CHIEFFI), A., i, 65.

compounds of aluminium halides with (MENSCHUTKIN), A., i, 65.

hydriobromide and hydrochloride (MAASS and MCINTOSH), A., i, 289.

brucine sulphite (MAYER), A., i, 223.

**Benzophenone, *p*-amino-**, compounds of, with  $\beta$ -naphthol and  $\beta$ -naphthol-aldehyde (TORREY and PORTER), A., i, 340.

3:5-*dibromo*-4-amino- (CLARKE and ESSELEN), A., i, 725.

chloroimino- (PETERSON), A., i, 880.

*poly*hydroxy-, colouring-matters of, relation between chemical constitution and fastness to light of (WATSON and DUTTA), A., i, 305.

***p*-Benzopinacolin**, preparation of (KIJNER), A., i, 44.

***o*-Benzquinone**, two forms of (KEHRMANN), A., i, 883.

***o*-Benzquinone**, 3- and 4-chloro-, and 4:5-*dichloro*-, and quinhydrone of the latter (WILLSTÄTTER and MÜLLER), A., i, 729.

***p*-Benzquinone**, electrolytic oxidation of (KEMPF), A., i, 464.

mechanism of reactions of (POSNER), A., i, 554.

oxidation of amino-acids by (TRAUBE), A., i, 980.

equilibrium of the reaction of, with hydrogen chloride (SCHMIDLIN), A., i, 727.

compounds of, with pyrogallol, hydroxyquinol, phloroglucinol, and 2:3-*di*hydroxynaphthalene (SIEGMUND), A., i, 654.

***p*-Benzquinone**, *m*-*dibromo*-, chloro-, *m*- and *p*-*dichloro*-, and *trichloro*-,  $\beta$ -lactones from (STAUDINGER and BEREZA), A., i, 461.

2-bromo-4-chloroimino-, and 2-chloro-6-bromo-4-chloroimino- (RAIFORD), A., i, 993.

hydroxy- (WILLSTÄTTER and MÜLLER), A., i, 729.

3:6-*dinitro*-2:5-*dihydroxy*- (*nitranilic acid*), preparation of (NIETZKI), A., i, 69.

***o*-Benzquinones**, (WILLSTÄTTER and MÜLLER), A., i, 728.

***p*-Benzquinone-2-acetic acid**, 4-imino-, and its ammonium salt (MÖRNER), A., i, 56.

***p*-Benzquinonedi-2- $\alpha$ -naphthaquinonyl-di-imine** (PUMMERER and BRASS), A., i, 655.

***p*-Benzquinoneoxime**, 2:6-*dinitro*-phenylhydrazone (BORSCHE and RANTSCHER), A., i, 331.

***p*-Benzquinoneoxonium** hydrosulphide (RICHTER), A., i, 135.

**Benzotetronic acid**. See Coumarin, 4-hydroxy-.

**Benzotrichloride**, *o*-chloro- (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), A., i, 445.

**Benzotrichloride**, 2:3:5:6-tetrachloro- (NICODEMUS), A., i, 346.

**Benzoylacetic acid**, fate of, in the body (DAKIN), A., ii, 419.

ethyl ester, action of phenylhydrazine on (KÜHLING), A., i, 87.

methyl ester, desmotropy of (MEYER), A., i, 865.

metallic salts (KNORR), A., i, 977.

**α-Benzoyl-γ-acetyl-β-phenylbutyric acid**, ethyl ester (DIECKMANN and v. FISCHER), A., i, 451.

**5-Benzoylanilino-1-*o*-nitrophenyl-3-methylpyrazole** (MICHAELIS, GRAFF, GESING, and BOIE), A., i, 235.

**Benzoyl-*p*-anisidines**, *o*-, *m*-, and *p*-nitro-, nitration of (REVERDIN), A., i, 776.

**Benzoylanthranil**, constitution of (HELLER), A., i, 81.

*m*- and *p*-nitro- (BOGERT, GORTNER, and AMEND), A., i, 581.

**Benzoylanthranilic acid**, *m*- and *p*-nitro- (BOGERT, GORTNER, and AMEND), A., i, 580.

**Benzoylazobenzene**, *o*-, *m*-, and *p*-nitro- (GASTALDI), A., i, 1047.

**Benzoylazo-*p*-bromobenzene**, *o*-, *m*-, and *p*-nitro- (GASTALDI), A., i, 1047.

**o-Benzoylbenzoic acid**, reduction products of the anhydroxime of (ROSE), A., i, 372.

3:6-, and 4:5-dichloro- (ULLMANN and BILLIG), A., i, 490.

***p*-Benzoylbenzoic acid**, *p*-bromo- (ULLMANN and SONE), A., i, 468.

**1-Benzoyl-4-benzylidenehydantoin**, 2-thio- (WHEELER, NICOLET, and JOHNSON), A., i, 1031.

**Benzoyl-*p*-bromophenylhydrazine**, *o*-, *m*-, and *p*-nitro- (GASTALDI), A., i, 1047.

**O- and *N*-Benzoyl-5-bromosalicylamide**, (HUGHES and TITHERLEY), T., 28.

**Benzoylisobutyric acid**, ethyl ester, and its oxime (HALLER and BAUER), A., i, 300.

**α-Benzoyl-γ-iso-, and *tert*-butyryl-β-phenylbutyric acids**, ethyl esters (DIECKMANN and v. FISCHER), A., i, 452.

**Benzoyl-ψ-cumidylguanidine** (PIERRON), A., i, 166.

**Benzoyldehydracetic acid**, action of ammonia on, and formation of its lactam (PETRENKO-KRITSCHENKO and SCHÖTTLE), A., i, 1020.

**5-Benzoyl-3:4-diacetylgallic acid**, (FRANCIS and NIERENSTEIN), A., i, 644.

**Benzoyldianilinostilbene** and its salts and compounds with phenols (EVEREST and McCOMBIE), T., 1758.

**Benzoyldiethylmalonamic acid** (FREUND and FLEISCHER), A., i, 236.

**Benzoylenecarbamide**, synthesis of (FINGER and GÜNZLER), A., i, 237.

**Benzoylenedimethylpyrrolidone** and its derivatives (GABRIEL), A., i, 228.

**Benzoylenedimethylpyrrolone** (GABRIEL), A., i, 228.

4-amino-, 4-bromo-, and 4-nitro-derivatives (GABRIEL), A., i, 228.

**Benzoylenedimethylpyrrolonecarboxylic acid**, ethyl ester (GABRIEL), A., i, 227.

**Benzoyl-ψ-ethylhydantoic acid** and thio-, and their ethylesters (WHEELER, NICOLET, and JOHNSON), A., i, 1031.

**Benzoylformaldehyde**, *m*-nitro-, oxidation of (EVANS and WITZEMANN), A., i, 987.

**Benzoylguanidine**, and *m*-nitro-, (TRAUBE), A., i, 115.

**γ-Benzoylhexoic acid**, ethylester, and its *p*-nitrophenylhydrazone (HALLER and BAUER), A., i, 727.

**Benzoylhomopiperonylamine** (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 1015.

**Benzoylhydantoic acid** and thio-, and its ethyl ester (WHEELER, NICOLET, and JOHNSON), A., i, 1031.

**Benzoylhydrobromoquinine** and its salicylate (VEREINIGTE CHININFABRIKEN ZIMMER & Co.), A., i, 559.

**1-Benzoylindole** (WEISSGERBER), A., i, 155.

**3-Benzoylindole** and its derivatives (ODDO and SESSA), A., i, 487.

**1-Benzoylisatin-3-phenylhydrazone** (AUWERS and BOENNECKE), A., i, 588.

**ω-Benzoyl-*o*-methylaminoacetophenone** (KAUFMANN and PLÁY JANINI), A., i, 916.

**Benzoyl-ψ-methylhydantoic acid**, ethyl ester (WHEELER, NICOLET, and JOHNSON), A., i, 1031.

**β-Benzoyl-β-methylpentane** (HALLER and BAUER), A., i, 652.

**Benzoylmethylcyclopropane** and its *p*-nitrophenylhydrazone (BLAISE and HERMAN), A., i, 881.

**γ-Benzoyl-γ-methylvaleric acid** and its ethyl ester and their oximes (HALLER and BAUER), A., i, 727.

**o-Benzoylnaphthoylbenzene** (GUYOT and VALLETTE), A., i, 654.

**Benzoyloxyacetamide**, *p*-nitro- (EINHORN and SEUFFERT), A., i, 45.

**Benzoyloxyacetic acid**, *p*-amino-, and *p*-nitro-, ethyl esters of (EINHORN and SEUFFERT), A., i, 45.

**4-Benzoyloxy-3-aldehydotriphenylacetic acid** (BISTRZYCKI and FELLMANN), A., i, 133.

**p-Benzoyloxybenzaldehyde** and its derivatives (POPE), P., 73.

**2-Benzoyloxybenzoic acid, *o*-nitro-** (FRANCIS and NIERENSTEIN), A., i, 644.

**3-Benzoyloxybenzoic acid, *p*-hydroxy-** (FISCHER, FREUDENBERG, and LEPIUS), A., i, 875.

***m*-nitro- (FRANCIS and NIERENSTEIN), A., i, 643.**

**4-Benzoyloxybenzoic acid, *m*-hydroxy-** (FISCHER, FREUDENBERG, and LEPIUS), A., i, 875.

***m*-nitro- (FRANCIS and NIERENSTEIN), A., i, 643.**

**o-Benzoyloxybenzoic anhydride** (EINHORN and SEUFFERT), A., i, 54.

***p*-Benzoyloxybenzonitrile** (POPE), P., 74.

***o*-Benzoyloxy-*o*'-benzoyloxybenzoic acid** (BOEHRINGER & SÖHNE), A., i, 987.

***p*-Benzoyloxybenzylidine-*p*-nitroaniline** (POPE), P., 74.

***a*- and *b*-*o*-Benzoyloxyacinnamic acids** and their methyl esters (STOERMER, FRIDERICI, BRÄUTIGAM, and NECKEL), A., i, 296.

***p*-Benzoyloxydiphenylphthalide** (MEYER and FISCHER), A., i, 723.

**4-Benzoyloxy-2-methoxystilbene** and *p*-nitro- (STOERMER and FRIEMEL), A., i, 632.

***p*-Benzoyloxyphenylphthalide** (MEYER and FISCHER), A., i, 723.

***p*-Benzoyloxyxystyrene,  $\omega$ -nitro-** (REMFRY), T., 286; P., 21.

**9-Benzoylphenanthrene** (WILLGERODT and ALBERT), A., i, 883.

**Benzoylphenylacetamide**, preparation of (JOHNSON and CHERNOFF), A., i, 372.

**$\gamma$ -Benzoyl- $\beta$ -phenylbutyric acid**, lactones of, and  $\beta$ - and  $\gamma$ -bromo-, and  $\beta\gamma$ -dibromo-, and  $\gamma$ -hydroxy- (KOHLER), A., i, 985.

**$\gamma$ -Benzoyl- $\beta$ -phenylbutyric acid**,  $\beta$ -chloro-, methyl ester (KOHLER), A., i, 985.

**$\gamma$ -Benzoyl- $\beta$ -phenylbutyrolactonic acid** (KOHLER), A., i, 985.

**$\gamma$ -Benzoyl- $\beta$ -phenyl- $\alpha\alpha$ -dimethylbutyric acid** and  $\gamma$ -bromo-, and  $\gamma$ -hydroxy-, and their derivatives (KOHLER, HERITAGE, and MACLEOD), A., i, 863.

**1-Benzoylphenyl-2:3-dimethyl-5-pyrazolone** (TORREY and RAFFSKY), A., i, 85.

***N*-Benzoylphenylethylamine, *d*, and *l*-*a*-*p*-hydroxy-** (MOORE), T., 420.

**$\gamma$ -Benzoyl- $\beta$ -phenyl- $\alpha$ -ethylbutyric acid** and its methyl ester (KOHLER, HERITAGE, and MACLEOD), A., i, 863.

**$\beta$ -Benzoyl- $\alpha$ -phenylethylmalonic acid, methyl ester** (KOHLER, HERITAGE, and MACLEOD), A., i, 864.

**$\gamma$ -Benzoyl- $\beta$ -phenylethylmalonic acid**, ethyl ester and  $\gamma$ -bromo-, and methyl ester and  $\gamma$ -bromo-, and  $\alpha\gamma$ -dibromo- (KOHLER), A., i, 984.

**$\gamma$ -Benzoyl- $\beta$ -phenyl- $\gamma$ -heptolactone**,  $\gamma$ -hydroxy- (KOHLER), A., i, 986.

**$\gamma$ -Benzoyl- $\beta$ -phenyl- $\alpha$ -methylbutyric acids** and their esters (KOHLER, HERITAGE, and MACLEOD), A., i, 863.

**1-Benzoylphenyl-3-methyl-5-pyrazolone** and its hydrochloride (TORREY and RAFFSKY), A., i, 84.

**$\gamma$ -Benzoyl- $\beta$ -phenylvinylacetic acid** (KOHLER), A., i, 985.

**$\gamma$ -Benzoyl- $\beta$ -phenylvinylmalonic acid** methyl ester and bromo- (KOHLER), A., i, 984.

**$\beta$ -Benzoyl- $\beta$ -pivaloylpropane** and its oxime (HALLER and BAUER), A., i, 727.

**Benzoylcyclopropane, *m*-nitro-** (KIJNER), A., i, 989.

**$\beta$ -Benzoylpropionic acid, brucine salt** (HILDITCH), T., 236.

**4-Benzoyl-5-pyrazolone-3-carboxylo-benzoylhyclazide** (CURTIUS and GOCKEL), A., i, 402.

**Benzoylpyruvamide** (MUMM and MÜNCHMEYER), A., i, 79.

**$\gamma$ -imino- (MUMM and MÜNCHMEYER), A., i, 80.**

**Benzoylpyruvic acid**, conversion of hydroxymethyleneacetophenone into (MUMM and MÜNCHMEYER), A., i, 79.

**brucine salt** (HILDITCH), T., 236.

**$\gamma$ -imino-, and its sodium salt** (MUMM and MÜNCHMEYER), A., i, 80.

**Benzoylsyringic acid**, *p*-hydroxy- (FISCHER, FREUDENBERG, and LEPIUS), A., i, 875.

**Benzoyl-*m*-tolylguanidine** and its hydrochloride (PIERRON), A., i, 166.

**1-Benzoyl-2:6:8-trimethyltetrahydro-quinoline** (JONES and EVANS), T., 336.

**Benzinaconediphenylether** (WIELAND), A., i, 851.

**Benzthiazole-1-*o*-benzoic acid** and its derivatives (REISSERT and HOLLE), A., i, 982.

**1:2:3-Benztriazole, 7-nitro-, and 7-nitro-1-hydroxy-** (BORSCHE and RANTSCHEFF), A., i, 330.

**Benzyl iodide, *p*-nitro-** (KNOLL & Co.), A., i, 432.

**methyl ether, 2:5-dibromo-3-nitro-4-hydroxy-** (ZINCKE, FROHNEBERG, and KEMPF), A., i, 440.

**Benzyl alcohol**, behaviour of, in plants (CIAMICIAN and RAVENNA), A., ii, 643.

**Benzylacetic acid**, brucine salt (HILDITCH), T., 235.

**Benzylallylmalonic acid**, ethyl ester (JOHNSTON and HILL), A., i, 503.

**Benzylamine**, preparation of (SABATIER and MAILHE), A., i, 627.

action of, on *s*-dibromosuccinic acid (FRANKLAND), T., 1775; P., 206.

salts of (HILDITCH), T., 237.

auribromide (DEHN and DEWEY), A., i, 915.

**Benzylamine, p-hydroxy-**, salts of (TIFFENEAU), A., i, 810.

2:3- and 3:4-dihydroxy-, salts of (DOUETTEAU), A., i, 973.

**ω-Benzylaminoacetophenone**, phenylhydrazone (BUSCH and HEFELE), A., i, 583.

**Benzylaminobromosuccinic acid**, benzylamine salt (FRANKLAND), T., 1780; P., 206.

**Benzylaminostyryl phenyl ketone** (ANDRÉ), A., i, 269.

**Benzylammonium nitrite** (RÂY and DATTA), T., 1475; P., 127.

osmichloride (GUTBIER and WALBINGER), A., i, 191.

platinibromide (GUTBIER, BAURIEDEL, and OBERMAIER), A., i, 33.

rutheni-bromide and -chloride (GUTBIER and LEUCHS), A., i, 183.

**4:5-Benzylazimino-*o*-toluidine** (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 928.

**β-Benzyl-γ-benzylidenebutyric acid** and its methyl ester (REYNOLDS), A., i, 861.

**α-Benzylcinnamic acid**, ethyl ester (AUWERS and EISENLOHR), A., ii, 783.

**Benzylidialkylacetic acids**, asymmetric, preparation of (DUMESNIL), A., i, 718.

**Benzylidethysilicol** (KIPPING and HACKFORD), T., 140; P., 9.

**Benzylidemethylamine, p-hydroxy-**, and its salts (TIFFENEAU), A., i, 779.

3:4-dihydroxy-, and its hydrochloride (TIFFENEAU), A., i, 973.

**1-Benzyl-2:3-dimethylbenzimidazolium chloride**, 4:7-dinitro-6-hydroxy- (MELDOLA and KUNTZEN), T., 2044.

**1-Benzyl-2:3-dimethyl-6-benzimidazolone**, 4:7-dinitro- (MELDOLA and KUNTZEN), T., 2044.

**β-Benzyl-β-diphenylmethylhydroxylamine** (ANGELI, ALESSANDRI, and AIAZZO-MANCINI), A., i, 545.

**Benzylethylammonium platinibromide** (GUTBIER, BAURIEDEL, and OBERMAIER), A., i, 33.

**Benzylethylpropylacetamide** (DUMESNIL), A., i, 719.

**Benzylethylpropylacetophenone** (DUMESNIL), A., i, 719.

**Benzylethylpropylcarbinol** (DAVIES and KIPPING), T., 298.

**Benzylethylpropylsilicol** (KIPPING and HACKFORD), T., 141; P., 9.

**α-Benzyl-*α*-ethylvaleric acid** (DUMESNIL), A., i, 719.

**β-Benzyl-*d*-glucoside** and its tetra-acetyl derivative (FISCHER and HELFERICH), A., i, 802.

**α-Benzylglutaconic acid, *cis*- and *trans*-** semianilides of (THOLE and THORPE), T., 2232.

**cis-α-Benzylglutaconic acid** and its silver salt and ethyl ester (THOLE and THORPE), T., 2228.

**N-Benzylhelicinaldoxime** (SCHEIBER and KLOPPE), A., i, 382.

**γ-Benzylhexane** (DUMESNIL), A., i, 719.

**Benzylhydantoin**. See Phenylalaninehydantoin.

hydroxy-. See Tyrosinehydantoin.

**1-Benzylhydrastinine** hydrochloride (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 1015.

**α-Benzylhydrohydrastinine** and its salts (FREUND and LEDERER), A., i, 907.

**Benzyl-β-hydroxypropylmalonic acid** and its silver salt (JOHNSON and HILL), A., i, 503.

**Benzylidene chloride** 2:3:4-trichloro-, (NICODEMUS), A., i, 346.

**4-Benzylideneamino-2-acetyl-*α*-naphthol** (TORREY and CARDARELLI), A., i, 68.

**α-Benzylideneamino-*α*-phenylacetamide** (CLARKE and FRANCIS), T., 320; P., 22.

**3-Benzylideneamino-2-styryl-4-quinazolone**, and its hydrochloride and 6- and 7-amino-, diacetyl derivatives (BOGERT, BELL, and AMEND), A., i, 162.

**Benzylideneaniline, *o*-iodo-** (MAYER), A., i, 870.

**Benzylideneanthratriquinonehomosalicylic acid**, pentabromohydroxy-, and pentaiodohydroxy-, and the potassium salt of the latter (CLEMMENSEN and HEITMAN), A., i, 543.

**Benzylidene bases**, electrolytic reduction of (LAW), P., 310.

**syn-Benzylidene-5-bromosalicylamide** (HUGHES and TITHERLEY), T., 26.

**Benzylidene-*α*-cinnamylideneacetophenonehydroxylamineoxime** (CIUSA and TERNI), A., i, 918.

**Benzylidenedehydracetic acid** (HALE), A., i, 722.

**Benzylidenedehydracetocarboxylic acid** (HALE), A., i, 722.

**Benzylidenediacetyl.** See *Styryl methyl diketone*.

**$\alpha$ -Benzylidene- $\gamma\gamma$ -dimethylparaconic acid, *p*-chloro-** (STOBBE and WAHL), A., i, 374.

**Benzylidenehydantoin**, aluminium compound of, and 3:5-dichloro-4-hydroxy-, and its ammonium salt and *p*-nitro- (WHEELER and HOFFMAN), A., i, 499.

$\alpha$ -bromo-,  $\alpha$ -chloro-, and  $\alpha$ -thio- (WHEELER, HOFFMAN, and JOHNSON), A., i, 923.

**2-Benzylideneindoxyl**, *o*-amino-, and *o*-nitro- (NOELTING and STEUER), A., i, 165.

**Benzylidenemalonyl** chloride and its additive compound with pyridine (STAUDINGER and OTT), A., i, 640.

**Benzylidene- $\beta$ -triazoethylamine**, *p*-nitro- (FORSTER and NEWMAN), T., 1280; P., 154.

**Benzyliminophthalanil** (REISSERT and HOLLE), A., i, 982.

**Benzylindene** (WEISSGERBER), A., i, 713.

**Benzylmethylallylamine** and its platinum chloride (EMDE and SCHELLBACH), A., i, 282.

**Benzylmethylallylpropylammonium chloride** (EMDE and SCHELLBACH), A., i, 282.

**Benzylmethylamine**, *p*-hydroxy-, and salts (TIFFENEAU), A., i, 778.

3:4-dihydroxy-, and its hydrochloride (TIFFENEAU), A., i, 973.

$\alpha$ -**Benzyl- $\alpha$ -methylbutyric acid** (DUMESNIL), A., i, 719.

**Benzylmethylcarbinol**,  $\omega$ -amino-, and its hydrochloride (SCHMIDT and CALLIESS), A., i, 742.

**5-Benzyl-10-methyldihydroacridine**, 5-cyano- (KAUFMANN, ALBERTINI, and WIDMER), A., i, 751.

**Benzylmethylethylacetamide** (DUMESNIL), A., i, 719.

**Benzylmethylethylacetophenone** (DUMESNIL), A., i, 719.

**Benzylmethylethylcarbinol**, preparation of (DAVIES and KIPPING), T., 298.

**3-Benzyl-1-methylcyclohexan-3-ol** (MAILHE and MURAT), A., i, 127.

**3-Benzyl-1-methylcyclohexene** (MAILHE and MURAT), A., i, 127.

**Benzyl methyl ketone**, 2:6-dinitro-, and its phenylhydrazone (BORSCHE and RANTSCHEFF), A., i, 332.

**5-Benzyl-7-methyltetrahydrohexathiazole-4-one-5-carboxylic acid**, 2-amino-, ethyl ester (JOHNSON and HILL), A., i, 503.

**9-Benzylphenanthrene** (WILLGERODT and ALBERT), A., i, 883.

**Benzylphenylmethylcarbinol**, preparation of (DAVIES and KIPPING), T., 298.

**3-Benzyl- $\alpha$ -pyrone**, 6-chloro-, and 6-hydroxy-, and salts of the latter (THOLE and THORPE), T., 2229.

**Benzylpyruvic acid**, brucine salt (HILDITCH), T., 235.

**Benzylsulphonyl** chloride, *o*-chloro- (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), A., i, 445.

**Benzyl- $\psi$ -thiocarbamide nitrite** (ARNDT), A., i, 919.

**2-Benzylthiol-1-phenyl-4-benzylidenehydantoin** (WHEELER and BRAUTLECHT), A., i, 500.

**5-Benzyl-5-thiolpropylbarbituric acid** (JOHNSON and HILL), A., i, 503.

**Benzyl- $\beta$ -thiolpropylmalonic acid**, potassium hydrogen salt of (JOHNSON and HILL), A., i, 503.

**Benzyltrimethylammonium**, *p*-hydroxy-, chloride and iodide (TIFFENEAU), A., i, 779.

**1-Benzyl-2:6:8-trimethyltetrahydroquinoline** hydriodide (JONES and EVANS), T., 338.

$\alpha$ -**Benzyl- $\gamma$ -valerolactone- $\alpha$ -carbonyl-thiocarbamide** (JOHNSON and HILL), A., i, 503.

$\alpha$ -**Benzyl- $\gamma$ -valerolactone- $\alpha$ -carboxylic acid** and its silver salt (JOHNSON and HILL), A., i, 503.

**Berberine**, synthesis of (PICTET and GAMS), A., i, 807.

constitution and spectroscopic examination of (TINKLER), T., 1340; P., 162.

sulphite and benzaldehyde sulphite (MAYER), A., i, 224.

**Beryl** from pegmatites of Madagascar (DUPARC, WUNDER, and SABOT), A., ii, 1105.

rose, optical properties of (LACROIX and RENGADE), A., ii, 736.

**Betaine**, occurrence of, in the muscle of cephalopods (HENZE), A., ii, 216.

isolation of, from plants (STANĚK), A., ii, 818.

wandering of, in plants (STANĚK), A., ii, 1124.

**Betaines**, formation of (KIRPAL), A., i, 156.

in plant tissues (SCHULZE and PFENNIGER), A., ii, 426.

**Biguanide**, preparation of (OSTROGOVICH), A., i, 429.

**Bile**, presence of, in the stomach (CATHCART), A., ii, 749.

**Bile**, effect of protein food on the secretion of (LOEB), A., ii, 51.  
chemical reaction of (QUAGLIARIELLO), A., ii, 1114.  
of hippopotamus. See under Hippopotamus.

**Bile pigments** (FISCHER), A., i, 803; (FISCHER and MEYER-BETZ), A., i, 1004; (FISCHER and MEYER), A., i, 1005.  
formation of, from blood (BRUGSCH and YOSHIMOTO), A., ii, 629; (BRUGSCH and KAWASHIMA), A., ii, 630.  
reduction of, by means of palladium (VILLE), A., i, 554.  
detection of, in urine (v. MASLOFF), A., ii, 1144.

**Bile salts**, anti-bactericidal action of (CUMMINS), A., ii, 1123.

**Biliary acids**, isolation of individual (PREGL and BUCHTALA), A., ii, 1009.

**Binary compounds**, analysis of (OSTROMISSLENSKY), A., ii, 195; (RUFF), A., ii, 264.

**Binary mixtures**. See Mixtures, binary.

**Binary systems**, equilibrium in (VAN KLOOSTER), A., ii, 111; (BORNE-MANN), A., ii, 195.  
application of the phase rule to mixed crystals in (PRINS), A., ii, 196.  
of partially miscible liquids, vapour pressure of (KOHNSTAMM and TIMMERMANS), A., ii, 370.

**Biotoxin** (MARINO-ZUCO, ONORATO, and GIUGANINO), A., ii, 1108.

**Birch-camphor**, micro-chemistry of (TUNMANN), A., ii, 1022.

**αα-Bis-5- and 3-acetyl-2:4-dimethyl-pyrrolethane** (COLACICCHI), A., i, 1030.

**Bis-3- and 5-acetyl-2:4-dimethylpyrrolyl-methane** (COLACICCHI), A., i, 1030.

**4:4'- (or 2:2') Bisbenzeneazo-3:5:3':5'-tetrahydroxydiphenyl** (MEYER and MEYER), A., i, 873.

**Bis-p-benzoquinoneoxonium** hydrotrisulphide (RICHTER), A., i, 135.

**αα-Bis-5-benzoyl-2:4-dimethylpyrrolyl-n- and isobutane** (COLACICCHI), A., i, 1030

**αα-Bis-5-benzoyl-2:4-dimethylpyrrolyl-ethane** (COLACICCHI), A., i, 1030.

**αα-Bis-5-benzoyl-2:4-dimethylpyrrolyl-heptane** (COLACICCHI), A., i, 1030.

**Bis-5-benzoyl-2:4-dimethylpyrrolyl-methane** (COLACICCHI), A., i, 1030.

**Biscarbostyrlpiran** and its chloride (RADULESCU), A., i, 498.

**Biscinnamylideneacetophenone**, compound of, with tin tetrachloride (PFEIFFER, FRIEDMANN, GOLDBERG, PROS, and SCHWARZKOPF), A., i, 791.

**Bis-de-N-methylbishydrocotarnine** and its salts (FREUND and KUPFER), A., i, 912.

**Bis-de-N-methylisobishydrocotarnine** and its salts (FREUND and KUPFER), A., i, 912.

**Bisdiazotetraazolehydrazide** and its sodium derivative (HOFMANN and HOCK), A., i, 1048.

**Bisdicinnamylideneacetone**, compound of, with tin tetrachloride (PFEIFFER, FRIEDMANN, GOLDBERG, PROS, and SCHWARZKOPF), A., i, 791.

**Bisdiethylmalonhydrazinic acid** (FREUND and FLEISCHER), A., i, 236.

**Bisdiethylhydroskorine** (GORTER), A., i, 562.

**Bisdimethylpyrone**, compound of, with tin tetrachloride (PFEIFFER, FRIEDMANN, GOLDBERG, PROS, and SCHWARZKOPF), A., i, 791.

**s-Bi-diphenylacetylhydrazide** and its chloride (STOLLÉ and LAUX), A., i, 508.

**Bisdiphenylbromoacetylhydrazide** chloride (STOLLÉ and LAUX), A., i, 508.

**Bisdiphenylchloroacetylhydrazide** chloride (STOLLÉ and LAUX), A., i, 508.

**Bisdiphenylchlorovinyldi-imide** (STOLLÉ and LAUX), A., i, 508.

**Bisdistyryl ketone**, compound of, with tin tetrachloride (PFEIFFER, FRIEDMANN, GOLDBERG, PROS, and SCHWARZKOPF), A., i, 791.

**Bis-α-ethylbutyrylhydrazide** (FREUND and FLEISCHER), A., i, 236.

**αβ-Bis-[4-(or 5-)glyoxaline]-propionic acid dipicrate** (PYMAN), T., 2178.

**αβ-Bis-[4-(or 5-)glyoxaline]-propionitrile**, salts of (PYMAN), T., 677.

**βγ-Bis-[4-(or 5-)glyoxaline]-propylamine** and its salts (PYMAN), T., 2178; P., 275.

**Bishydrazi-p-tolil** (*di-p-tolylbishydrazimethylene*) (CURTIUS and KASTNER), A., i, 325.

**Bis-1-hydrindone-(2:2)-spiran** (RADULESCU), A., i, 498.

**Bishydrocotarnines**, isomeric, and their salts and derivatives (FREUND and KUPFER), A., i, 911.

**Bisketophenylthionaphthen** (KALLE & Co.), A., i, 667.

**Bisketotolylthionaphthen** (KALLE & Co.), A., i, 667.

**Bisapomethylbrucine** and its derivatives (LEUCHS and ANDERSON), A., i, 746.  
salts of (LEUCHS and ANDERSON), A., i, 1018.

**Bisapomethylhydrobrucine** nitrate, nitro-, (LEUCHS and ANDERSON), A., i, 1018.

**Bismuth salts**, action of hydrogen and sodium peroxides on (HANUŠ and KALLAUNER), A., ii, 404.

**Bismuth carbonate** (VANINO), A., ii, 806.

hydride, attempts to prepare (VANINO and ZUMBUSCH), A., ii, 1098.

oxides (VANINO and ZUMBUSCH), A., ii, 118.

**Bismuth**, volumetric estimation of (VASSALLO), A., ii, 1139.

**Bismuth ochres** from California, (SCHALLER), A., ii, 293.

**Bismuth ores** (PRIWOZNIK), A., ii, 991.

**Bismuthides** (VOURNASOS; LEBEAU), A., ii, 405.

**Bisnitrobenzeneazo-azobenzene** (GREEN and BEARDER), T., 1971; P., 229.

**Bisnitroso-compounds**, relation between arylnitrosohydroxylamines and (BAMBERGER), A., i, 996.

**Bis-4-oximino-5-pyrazolone** (CURTIUS and GOCKEL), A., i, 403.

**Bisoxythionaphthen** ("thioindigo"), synthesis of (PRESCOTT and SMILES), P., 317.

**Bisoxythionaphthen**, chloro-, preparation of (GESELLSCHAFT FÜR CHEMISCHE INDUSTRIE IN BASEL), A., i, 481.

**Bisphenyl-tert.-butylpyrazolone** (WAHLBERG), A., i, 708.

**Bisphenyl styryl ketone**, compound of, with tin tetrachloride (PFEIFFER, FRIEDMANN, GOLDBERG, PROS, and SCHWARZKOPF), A., i, 791.

**Bis-p-toliketazine** (CURTIUS and KASTNER), A., i, 325.

**4:4'-(or 2:2')-Bis-p-toluenazeo-3:5:3':5'-tetrahydroxydiphenyl** (MEYER and MEYER), A., i, 873.

**Bis-p-toloyl-p-tolylazimethylene** (CURTIUS and KASTNER), A., i, 325.

**Bistolylthioglycolic acid** (KALLE & Co.), A., i, 667.

**Bixin**, constitution and derivatives of, (VAN HASSELT), A., i, 550.

and its derivatives (HEIDUSCHKA and RIFFART), A., i, 315.

*iso***Bixin** and its ethyl ether and potassium derivative (VAN HASSELT), A., i, 551.

**Bleaching** and polymerisation (STOBBE and EBERT), A., ii, 452.

investigation of the process of (HIGGINS), P., 314.

**Bleaching powder**, action of carbon dioxide on (HIGGINS), T., 858; P., 67; (TAYLOR), T., 1906; P., 243.

**Blende** from Picos de Europa, composition of (LLORD Y GAMBOA), A., ii, 733.

**Blomstrandine** from the Urals (HAUSER and HERZFELD), A., ii, 46.

**Blomstrandite** from Madagascar (LACROIX), A., ii, 296.

**Blood**, influence of compressed air on the formation of (BORNSTEIN), A., ii, 301.

volume and growth of the, in tame rats (CHISOLM), A., ii, 1107.

action of radium emanation on (CHAMBERS and RUSS), A., ii, 809.

action of blood-lipoids on the formation of (KEPINOW), A., ii, 125.

effect of altitude on the dissociation curve of (BARCROFT), A., ii, 211.

influence of lactic acid on the dissociation curve of (BARCROFT and ORBELI), A., ii, 124.

fat-splitting power of the (ABDERHALDEN and RONA), A., ii, 1108.

influence of a transplanted sarcoma on (CHISOLM), A., ii, 1108.

influence of under-feeding on (BOYCOTT and CHISOLM), A., ii, 1107.

influence of hydrazine on the amount of sugar in (UNDERHILL), A., ii, 910.

solubility of gases in (FINDLAY and CREIGHTON) A., ii, 211.

regulation of respiration by the (WINTERSTEIN), A., ii, 211.

effect of oxygen breathing on the (WARBURG), A., ii, 211, 503.

oxygen-transport capacity of, at different temperatures (V. LIEBERMANN and WIESNER), A., ii, 993.

formation of bile-pigment from (BRUGSCH and YOSHIMOTO), A., ii, 629; (BRUGSCH and KAWASHIMA), A., ii, 630.

preparation of a catalase from (WOLFF and DE STOECKLIN), A., i, 412.

coagulation of (WELSH), A., ii, 618.

deamidation of (MEDVEDEFF), A., ii, 739.

oxidation in (ONAKA), A., ii, 409.

regeneration of (MASING), A., ii, 993.

regeneration of, after destruction and haemorrhage (JONES), A., ii, 995.

scission of esters in (RONA), A., ii, 740.

hydrolysis of esters and fats by (RONA and MICHAELIS), A., ii, 302.

influence of transfusion of, on metabolism of matter and energy (HÁRI), A., ii, 739.

presence of pancreatic secretion in the (CARLSON and DRENNAN; DRENNAN), A., ii, 995.

effect of potassium salts on circulation of the (MATHISON), A., ii, 753.

influence of poisons on the enzymes of (DUNCKER and JODLBAUER), A., ii, 756.

**Blood**, toxic substances in, after thyroidectomy (TRENDELENBURG), A., ii, 50.  
 changes in, after nephrectomy and ureteral ligation (JACKSON), A., ii, 409.  
 trimethylamine in (DORÉE and GOLLA), A., ii, 212.  
 sugar of (RONA and TAKAHASHI), A., ii, 125; (FRANK), A., ii, 301; (FRANK and BRETSCHNEIDER), A., ii, 409.  
 ascidians', constituents of (HENZE), A., ii, 740.  
 carotid, effect of increased temperature of the (MOORHOUSE), A., ii, 739.  
 dog's, fat in (LATTES), A., ii, 994.  
 frog's, action of anti-coagulants on (PRINGLE and TAIT), A., ii, 739.  
 human, residual carbon in (MANCINI), A., ii, 504.  
 distribution of reducing substances in (LYTTKENS and SANDGREN), A., ii, 301.  
 mammalian, distribution of reducing substances in (LYTTKENS and SANDGREN), A., ii, 994.  
 new reagent for (GANASSINI), A., ii, 556.  
 reactions of Van Deen and Adler for (BONGIOVANNI), A., ii, 676.  
 action of metals on the reagents for, in presence of hydrogen peroxide (MICHEL), A., ii, 556.  
 reactions of, and detection in urine (WEITBRECHT), A., ii, 447.  
 detection of (v. FÜRTH; SARTORY), A., ii, 947.  
 detection of, by leucomalachite green (MICHEL), A., ii, 675.  
 estimation of the quantity of, in the body (MARKOFF, MÜLLER, and ZUNTZ), A., ii, 1107.  
 estimation of alkalis in (BERNHARDT), A., ii, 1031.  
 estimation of calcium in (VOORHOEVE), A., ii, 126.  
 estimation of chlorides in (OPPLER), A., ii, 150.  
 estimation of lactic acid in (FRIES), A., ii, 994.  
 normal and pathological, estimation of oxyproteic acids in (CZERNECKI), A., ii, 302.  
 estimation of sugar in (MICHAELIS and RONA), A., ii, 73; (RONA and DÖBLIN), A., ii, 302; (FRANK), A., ii, 340; (LÉPINE and BOULUD), A., ii, 619.  
**Blood-corpuscles**, isoelectric constants of the constituents of (MICHAELIS and TAKAHASHI), A., ii, 48.  
**Blood-corpuscles**, calcium content of the (RONA and TAKAHASHI), A., ii, 302.  
 permeability of (GRYN), A., ii, 740.  
 permeability of, to dextrose (RONA and DÖBLIN), A., ii, 302.  
 red, permeability of, to alkali and alkali-earths (GRYN), A., ii, 49.  
 influence of salts and non-electrolytes on the permeability of (MICULICICH), A., ii, 49.  
 difference between individual (DINES), A., ii, 740.  
 action of arsenic on (ONAKA), A., ii, 212.  
 haemolysis of (BRAHMACHARI), A., ii, 213; (RUSZNYAK), A., ii, 1108.  
 hemolysis and agglutination of (DUNIN-BORKOWSKI), A., ii, 212.  
 influence of oxidation in (WARBURG), A., ii, 49.  
 behaviour of, in oleic acid poisoning (SCHMINCKE and FLURY), A., ii, 125.  
 action of selenium salts on (JONES), A., ii, 1108.  
**Blood-gas apparatus**, determination of the constants of (BARCROFT and HIGGINS), A., ii, 765.  
**Blood-pigment**, constitution of the coloured constituent of (PILOTY, QUITMANN, and EPPINGER), A., i, 92.  
 decomposition of (BARDACHZI), A., i, 95.  
 valency of the metal in (MANCHOT), A., i, 96.  
 valency of iron in (KÜSTER), A., i, 409.  
 action of pyridine on (KALMUS: v. ZEYNEK), A., i, 95.  
**Blood-plasma and -serum**, dipeptide-splitting action of (HALL and WILLIAMSON), A., ii, 302.  
**Blood-platelets**, human (AYNAUD), A., ii, 213.  
**Blood-pressure**, action of choline on (POPIELSKI), A., ii, 124; (ABDERHALDEN and MÜLLER), A., ii, 994.  
 influence of digitalin substances on (HERNANDO), A., ii, 1017.  
 action of extracts of invertebrate tissues on (GAUTRELET), A., ii, 1107.  
 effect of injection of pineal extracts on (EYSTER and JORDAN), A., ii, 215.  
 action of potassium salts on (MATHISON), A., ii, 125.  
 lowering of, by urine (POPIELSKI), A., ii, 511.  
**Blood-serum**, solubility of gases in (FINDLAY and CREIGHTON), A., ii, 211.

**Blood-serum**, influence of antipyrine on the proteins of (CERVELLO), A., ii, 409.  
 changes in, during starvation (POLÁNYI), A., ii, 741.  
 maltase in (DOXIADES), A., ii, 619.  
 the proteins of (BREINL), A., ii, 741.  
 estimation of uric acid in (ROETHLISBERGER), A., ii, 548.

**Blood-stains**, detection of, by benzidine (GIGLI), A., ii, 348.

**Blood-vessels**, action of weak acids on the (SCHWARZ and LEMBERGER), A., ii, 809.  
 effects of animal extracts on the (CAMPBELL), A., ii, 315.  
 action of chloroform on (CAMPBELL), A., ii, 738.  
 cerebral, action of drugs on the (DIXON and HALLIBURTON), A., ii, 52.  
 chemical regulation of vascular tone in the (HOOKER), A., ii, 904.

**Body**, temperature and alkalinity of the, in relation to the instability of dextrose (HENDERSON), A., i, 769.  
 animal, formation of adrenaline in the (FUNK), A., ii, 907.  
 formation of glycine in the (FRIEDMANN and TACHAN), A., ii, 906.  
 behaviour of furylacrylic and furoyl-acetic acids in the (FRIEDMANN), A., ii, 910.  
 behaviour of glycols in the (MIURA), A., ii, 1014.  
 degradation of the naphthalene ring in the (KIKKOJI), A., ii, 909.

**Body fluids**, viscosity of (SNYDER and TODD), A., ii, 617.

**Bog ores**, assay of (KAYSSER), A., ii, 229.

**Boedeker's reaction**, method of applying (HERNÁNDEZ), A., ii, 226.

**Boiling-point**, determination of (V. KECHENBERG), A., ii, 95; (HANSEN), A., ii, 468.  
 determination of, of saturated aqueous solutions (BERKELEY and APPLEBEY), A., ii, 1062.

**Bolognian stones** (*phosphorescent calcium, strontium and barium sulphide preparations*) (VANINO and ZUMBUSCH), A., ii, 885.

**Bone**, chemistry of healthy and rachitic (GASSMANN), A., ii, 129.

**Borax**. See Sodium diborate.

**Bordeaux mixture**, action of carbon dioxide on (GIMINGHAM), A., ii, 764.

**Boric acid**. See under Boron.

**Borides**, crystallography of (DE SCHULTEN), A., ii, 486.

**Borneol**, transformation of, into camphor (ALOY and BRUSTIER), A., i, 730.

**Bornylaniline** and its derivatives (ULLMANN and SCHMID), A., i, 70.

**l-Bornyl diphenyldithiouethane**, rotatory dichroism of (BRUHAT), A., ii, 829.

**Bornylene**, oxidation of (HENDERSON and HEILBRON), T., 1887; P., 248.  
 compound of, with chromyl chloride (HENDERSON and HEILBRON), T., 1891; P., 248.  
 nitrosites (HENDERSON and HEILBRON), T., 1896; P., 249.

**Bornylenecarboxyl** chloride, hydrazide and azide (BREDT and HILBING), A., i, 657.

**Bornylone**. See  $\beta$ -Camphor.

**Bornyl-*o*-and *p*-toluidines** and their hydrochlorides (ULLMANN and SCHMID), A., i, 71.

**Bornyl-*m*-4-xylidine** (ULLMANN and SCHMID), A., i, 71.

**Borodisalicylic acid**, zinc hydrogen, salt of (FOELSSING), A., i, 449.

**Boron** hydrides, preparation of (HOFFMANN), A., ii, 279.

**Boric acid**, solubility and hydrates of (NASINI and AGENO), A., ii, 485.  
 tolerance of plants to (AGULHON), A., ii, 142.  
 esters of (COHN), A., i, 640.  
 compound of aluminium and (CHEMISCHE FABRIK COSWIG-ANHALT), A., ii, 984.  
 detection of, in preservatives (V. FELLENBERG), A., ii, 657.

**Boric acids** (HOLT), A., ii, 720.

**Borates**, distribution of, in potash deposits (BILTZ and MARCUS), A., ii, 1101.

**Metaborates**, alkali, and metaphosphates, fusion of (VAN KLOOSTER), A., ii, 110.

**Perboric acid**, detection of (LENZ and RICHTER), A., ii, 823.

**Borotungstic acid**, constitution of salts of (ROSENHEIM), A., ii, 612.

**Brain**, autolysis of the (SIMON), A., ii, 745.  
 isolation of cholesterol and cerebrosides from (SMITH and MAIR), A., i, 44.  
 cerebrosides of the (LOENING and THIERFELDER), A., i, 898.  
 soluble ferments of the (WROBLEWSKI), A., ii, 627.  
 human, a sulphatide from (KOCHE), A., ii, 129.  
 of the ox, choline in the (KAUFFMANN), A., ii, 1005.

**Brandy**, detection of fusel oil in (HERZOG), A., ii, 446.

**Brass**, estimation of sulphur in (THURNAUER), A., ii, 150.

**Brassidone** and its oxime (EASTERFIELD and TAYLOR), T., 2306; P., 279.

**Braunite** from Brazil (JEŽEK), A., ii, 120.

**Bromine**, atomic weight of, determined by electrolytic methods (GOLDBAUM), A., ii, 271.

vapour pressure and apparent super-heating of solid (CUTHBERTSON and CUTHBERTSON), A., ii, 582.

equilibrium of, with ether (MCINTOSH), A., i, 256.

photo-kinetics of substitution by (BRUNER and CZARNECKI), A., ii, 241; (BRUNER and LAHOCIŃSKI), A., ii, 242.

hydrolysis of (BRAY and CONNOLLY), A., ii, 864.

solutions, colour and constitution of (JOSEPH and JINENDRADASA), T., 274.

liberation of, and iodine from aqueous solutions (LABAT), A., ii, 653.

velocity of reaction of, on formic acid (JOSEPH), A., ii, 384.

vapour, destruction of the fluorescence of, by gases (WOOD), A., ii, 169.

action of, on phenols (ZINCKE, FROHNEBERG, and KEMPF), A., i, 439.

destruction of organic matter by (MAGNIN), A., ii, 1035.

distribution of, in the organism, after administration in food (ELLINGER and KOTAKE), A., ii, 509.

**Hydrobromic acid** (*hydrogen bromide*), equilibrium of, with ether (MCINTOSH), A., i, 256.

**Bromides**, influence of sodium chloride on the excretion of (PADERI), A., ii, 1011.

estimation of chlorides in (RABE), A., ii, 765.

**Hypobromite reaction**, influence of electrolytes on the velocity of the (SKRABAL), A., ii, 382.

**Bromine**, reaction for (DENIGÈS), A., ii, 652.

detection of, in human organs (LABAT), A., ii, 533.

estimation of, in presence of chlorides and iodides (CLAUSMANN), A., ii, 329; (BAUBIGNY), A., ii, 532.

estimation of, in water (GAUTIER and MOUREU), A., ii, 301.

**Bromo-compounds**, aromatic, reactivity of (BOURGEOIS and FOUASSIN), A., i, 963; (BOURGEOIS and HUBER), A., i, 964.

**Bromoform**, cycloscopic behaviour of quaternary aromatic ammonium salts in (WEDEKIND and PASCHKE), A., ii, 1060.

**Bronze**, tempering of (GRENET), A., ii, 42.

estimation of sulphur in (THURNAUER), A., ii, 150.

*Broussonetia papyrifera* (Japanese mulberry), diseases of the latex of (GERBER), A., ii, 647.

**Brucine**, iodine derivatives of (KRAUZE), A., i, 1016.

salts of, with organic acids (HILDITCH), T., 234.

salts of phthalic and succinic acids (PICKARD and KENYON), T., 60.

*perbromide* (CIUSA and SCAGLIARINI), A., i, 1016.

methosulphate (LEUCHS and ANDERSON), A., i, 1018.

polyhydrox sulphides (SCHMIDT and BEUNS), A., i, 913.

acetone sulphite (MAYER), A., i, 223.

acetophenone sulphite (MAYER), A., i, 223.

aldehyde sulphites of (MAYER), A., i, 223.

benzophenone sulphite (MAYER), A., i, 223.

**Brucinesulphonic acid** (LEUCHS and GEIGER), A., i, 1018.

**Brucinic acid** ethiodide and benzaldehyde sulphite (MAYER), A., i, 223.

**Bryonol** and its diacetyl derivative (POWER and MOORE), T., 943; P., 118.

**Bryony root**, constituents of (POWER and MOORE), T., 937; P., 118.

**Buchner funnel**, an addition to the (EGERTON), P., 189.

**Bulbocapnine** and its derivatives (GADAMER and KUNTZE), A., i, 1012.

*dl*-**Bulbocapnine methyl ether** and its methiodide (GADAMER and KUNTZE), A., i, 1012.

**Bumping**, prevention of (SPURRIER), A., ii, 965.

**Buphanes disticha**, constituents of the bulb of (TUTIN), T., 1240; P., 149.

**Buphanine** (TUTIN), T., 1243; P., 149.

**Buphanitine**, and its salts (TUTIN), T., 1243; P., 149.

*Bupleurum fructicosum*, oil from (FRANCESCONI and SANNA), A., i, 658, 896.

distribution of the oil of (FRANCESCONI and SERNAGIOTTO), A., ii, 1025.

constituents of the essential oil of, and preparation of nitrosochloride from it (FRANCESCONI and SERNAGIOTTO), A., i, 1000.

**Burette** for use in gas analysis (GAWALOWSKI), A., ii, 651.

a refill (v. DER HEIDE), A., ii, 651.

**Burette**, arrangement for reading a (MILBAUER), A., ii, 432; (GOETZE), A., ii, 531; (SACHER), A., ii, 650.

**holder for** (ROBERTS and McDERMOTT), A., ii, 875.

**Butadiene-caoutchouc**, "normal" and "sodium," and their derivatives (HARRIES and NERESHEIMER), A., i, 800.

**Butane**,  $\alpha\delta$ -diamino- (tetramethylenediamine), preparation of (FARBENFABRIKEN VORM. F. BAYER & CO.), A., i, 526.

$\alpha\beta\delta$ -tribromo-,  $\alpha\gamma\delta$ -tribromo- $\beta$ -hydroxy-, and  $\alpha\beta\delta$ -trihydroxy-, and their derivatives (PARISELLE), T., i, 941.

$\alpha\alpha\delta$ -tetrabromo- $\alpha\delta$ -dinitro-, and  $\alpha\delta$ -dinitro-, and its sodium salt (v. BRAUN and SOBECKI), A., i, 830.

$\gamma$ - $\beta$ -iodo- (PICKARD and KENYON), T., 65.

**cycloButane** derivatives of Guthzeit, spectroscopic examination of (HARTMANN), A., i, 208.

**cycloButanecarboxylic acid**, cyclobutyl ester (DEMJANOFF and DOJARENKO), A., i, 778.

**cycloButanol**, preparation of (DEMJANOFF and DOJARENKO), A., i, 778.

**$\beta$ -Butanolglycuronic acid** (SANEYOSHI), A., i, 836.

$\Delta^3$ -**Butenylbenzene** (RIIBER), A., i, 848.

$\Delta^{\alpha}$ -**Butinal**. See Tetrolaldehyde.

$\beta$ -*iso***Butoxy- $\beta$ -phenylpropionic acid** (SCHRAUTH, SCHOELLER, and STRUENSEE), A., i, 642.

**Butter**, estimation of water in (MEYER-INGH), A., ii, 78.

shea, constituents of (HÉBERT), A., ii, 1126.

**Butyl** and nitro-, nitrites (v. BRAUN and SOBECKI), A., i, 830.

*iso*- and *tert*.-**Butyl** bromides, equilibrium between (BRUNEL), A., i, 413, ii, 974.

*tert*.-**Butyl alcohol**, tribromo-, properties of (ALDRICH), A., i, 346.

*n*-**Butylamine**, salts of (HILDITCH), T., 236.

$\alpha$ -*iso***Butylaminobutyric acid** and its salts and esters (NIVIÈRE), A., i, 616.

*n*-**Butylammonium** rutheni-bromide and -chloride (GUTBIER and LEUCHS), A., i, 183.

nitrite (RAY and RAKSHIT), P., 291.

*n*- and *iso***Butylammonium** telluri-bromides and -chlorides (GUTBIER, FLURY, and MICHELER), A., i, 182.

osmichloride (GUTBIER and MAISCH), A., i, 19.

**Butylbenzene**,  $\delta$ -bromo- (v. BRAUN, DEUTSCH, and KRUBER), A., i, 968.

*tert*.-**Butylbenzene**, action of light on the bromination and chlorination of (SALIBILL), A., i, 277.

**Butylochloral** hydrosulphide (VOSWINKEL), A., i, 602.

**cycloButyldiethylcarbinol**, transformations of (KIJNER), A., i, 967.

$\Delta^{\alpha}$ -**Butylene**, bromo- (PARISELLE), A., i, 940.

$\Delta^{\beta}$ -**Butylene**,  $\alpha\alpha\gamma\delta\delta$ -hexachloro- (NICODEMUS), A., i, 346.

$\Delta^{\gamma}$ -**Butylene**,  $\alpha\beta$ -dibromo-, oxide (PARISELLE), A., i, 942.

**Butylene**  $\beta$ -glycol, derivatives of (CIAMICIAN and SILBER), A., i, 514.

4(or 5)-**Butylglyoxaline**,  $\gamma$ -amino-, and  $\gamma$ -oximino-, and their picrates (PYMAN), T., 2176; P., 275.

5-*tert*.-**Butylglyoxaline**, 2-hydroxy- (WIDMAN and WAHLBERG), A., i, 703.

**Butylcyclohexane**, derivatives of (DARZENS and ROST), A., i, 290.

*tert*.-**Butylcyclohexan-4-ol** (DARZENS and ROST), A., i, 290.

*tert*.-**Butylcyclohexan-4-one** and its semicarbazone (DARZENS and ROST), A., i, 290.

*n*-**Butylhexylcarbinol**, and its acetyl derivative (BYRTSCHENKO), A., i, 1.

*n*-**Butyl hexyl ketone**, and its semicarbazone (BYRTSCHENKO), A., i, 2.

$\psi$ -**Butylhippuric acid**, ethyl ester (RICHARD), A., i, 7.

$\alpha$ -**Butylhydrocotarnine** and its salts (FREUND and LEDERER), A., i, 910.

$\alpha$ -**Butylhydrohydrastinine** and its salts (FREUND and LEDERER), A., i, 907.

$\alpha$ -*iso***Butylhydrohydrastinine** and its salts (FREUND and LEDERER), A., i, 907.

*n*-**Butylienediurethane** (DOURIS), A., i, 949.

*n*- and *n*-*sec*.-**Butylieneditetramethylidaminodiphenylmethane** (LEMOULT), A., i, 399.

**Butyl methyl ketone**, *isonitroso*- (KNORR and HESS), A., i, 1019.

2-*iso***Butyloxy-1-methylidihydroquinoline**, 6:8-dinitro- (DECKER, KAUFMANN, PFEIFER, PROHATZKA, and ALBERTINI), A., i, 1025.

1-*iso***Butyl-2-pyridone** (DECKER, KAUFMANN, SASSU, and WISLOKI), A., i, 1024.

1-*iso***Butylpyridinium** salts (DECKER, KAUFMANN, SASSU, and WISLOKI), A., i, 1024.

*n*- and *iso***Butylsilicanes**, trichloro- (BYGDEN), A., i, 846.

$\psi$ -**Butyltartronic acid**, ethyl ester, amide of (RICHARD), A., i, 8.

***o*- and *p*-Butyltoluene**, action of light on the bromination and chlorination of (SALIBILL), A., i, 276.

**5-*tert*-Butyl-*m*-xylene-2-ol** (DARZENS and ROST), A., i, 290.

***iso*Butyramide**, bromo-, (MAUGUIN), A., i, 357.

***n*-Butyric acid**, *d*-methylhexylcarbinyl ester (HILDITCH), T., 222.

ammonium salt (FALCIOLA), A., i, 175.

***n*-Butyric acid**,  $\alpha$ -amino- (ABDERHALDEN), A., i, 955.

$\gamma$ -amino- $\alpha$ -hydroxy-, and its hydrochloride and platinichloride (FISCHER and GÖDDERTZ), A., i, 20.

$\alpha$ -bromo-, and  $\alpha$ -iodo-, guaiacol esters of (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 630.

$\beta$ -hydroxy-, estimation of in urine (COOKE and GORSLIN), A., i, 1140.

***d*-Butyric acid**,  $\alpha$ -amino- (KOELKER), A., i, 773.

***dl*-Butyric acid**,  $\alpha$ -amino-, formyl derivative (ABDERHALDEN, CHANG, and WURM), A., i, 526.

$\beta$ -amino-, and its methyl ester, and *d*-, and *l*- $\beta$ -amino- (FISCHER and SCHEIBLER), A., i, 527.

***iso*Butyric acid**,  $\alpha\beta\beta$ -tricyano-, ethyl ester (THOLE and THORPE), T., 1689.

$\alpha$ -iodo-, guaiacol ester of (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 630.

$\alpha$ -nitro-, and its salts (STEINKOPF and SUPAN), A., i, 946.

**Butyrophenone**, *p*-amino-, and its derivatives (KUNCKELL), A., i, 990.

***iso*Butyrophenone**,  $\alpha$ -amino-, and its salts (GABRIEL), A., i, 212.

derivatives of (GABRIEL), A., i, 991.

***iso*Butyrophenylmino-chloride** (STAUDINGER, CLAR, and CZAKO), A., i, 625.

**Butyrylacetic acid**, ethyl ester, copper salt of (WAHL), A., i, 108.

***n*-Butyrylcyclohexane** and its semicarbazone (DARZENS and ROST), A., i, 988.

***l*-Butyrylglycine**,  $\alpha$ -amino- (KOELKER), A., i, 773.

**Butyrylglyoxylic acid**, ethyl ester (WAHL), A., i, 108.

**3-Butyrylindole** (ODDO and SESSA), A., i, 487.

***p*-Butyrylphenylcarbamide** (KUNCKELL), A., i, 990.

**C.**

**Cacotheline** methonitrate (LEUCHS and ANDERSON), A., i, 1018.

**Cadmium**, atomic weight of (PERDUE and HULETT), A., ii, 397.

spectrum of (PASCHEN), A., ii, 833.

differences of potential between, and alcoholic solutions of some of its salts (GETMAN), A., ii, 888.

electrolytic deposition of (DOVER) A., ii, 1033.

**Cadmium alloys** with magnesium, electrical conductivity and hardness of (URAZOFF), A., ii, 887.

with mercury, conductivity of (CALVO), A., ii, 575.

with silver (PETRENKO and FEDOROFF), A., ii, 281, 800.

with tellurium (KOBAYASHI), A., ii, 40.

**Cadmium peroxides**, preparation of (TELEOFF), A., ii, 490.

**Cadmium**, precipitation of, as carbonate (SCHIRM), A., ii, 1138.

estimation of, electrolytically (BENNER and Rossi), A., ii, 770.

**Ceruleoellagic acid** and its acetyl and benzoyl derivatives (PERKIN), T., 1443; P., 194.

**Cæsium**, absorption spectrum of (BEVAN), A., ii, 350.

mercuric chloride (FOOTE and HAIGH), A., ii, 397.

magnesium chromate (BARKER), T., 1328; P., 198.

fluoride, hydrates of (DE FORGRAND), A., ii, 603.

nitrate, behaviour of, in solution (WASHBURN and MACINNES), A., ii, 794.

**Caffeine**, action of, on muscle (RANSOM), A., ii, 414.

reactions of, in vegetable structures (BOKORNY), A., ii, 142.

hydrochloride, double salt of, with antimony pentachloride (THOMSEN), A., i, 484.

and theobromine, estimation of (MONTHLÉ), A., ii, 673.

**Caffoline**. See 1:3:6-Trimethylallantoin.

**Calabar beans**, chemical examination of (SALWAY), T., 2148; P., 273.

**Calabarol** and its dibenzoyl derivative (SALWAY), T., 2156; P., 273.

**Calcite**, transformation of aragonite into (LASCHTSCHENKO), A., ii, 886.

colour reactions of (THUGUTT), A., ii, 334.

**Calcium**, atomic weight of (RICHARDS and HÖNIGSCHMID), A., ii, 112, 204.

and strontium, separation of the spectral lines of, in the magnetic field (MOORE), A., ii, 559.

and alcohol, hydrogenation by means of (BRETEAU), A., i, 625.

**Calcium metabolism.** See Metabolism. in blood and serum (RONA and TAKAHASHI), A., ii, 302. resorption and calcification of, in the body (TANAKA), A., ii, 907. requirements of plants (KONOWALOFF), A., ii, 222.

**Calcium alloys** with copper, lead magnesium, silver and thallium (BAAR), A., ii, 611.

**Calcium salts**, inhibition of exudation of fluids by (CHIARI and JANUSCHKE), A., ii, 514. physiological rôle of (LOEW), A., ii, 323. action of, on the heart (ROTHBERGER and WINTERBERG), A., ii, 1117.

**Calcium bromide**, efficiency of, as a drying agent (BAXTER and WARREN), A., ii, 268. carbide, decomposition of, by heat (ERLWEIN, WARTH, and BEUTNER), A., ii, 396. catalytic action of potassium carbonate on the absorption of nitrogen by (POLLACCI), A., i, 358. carbonate, mineralogy of (MOROZEWICZ), A., ii, 121. action of, on sodium carbonate (OECHSNER DE CONINCK), A., ii, 396. action of potassium and sodium hydroxide on (OECHSNER DE CONINCK), A., ii, 490. sulphate, sodium carbonate and sulphate, equilibrium between (HERZ), A., ii, 794. carbonates, isomorphous mixtures of, with magnesium and iron carbonates (DIESEL), A., ii, 725. chloride, depression of the freezing-point of, and sodium chloride (LAMPLough), A., ii, 581. calcium hydroxide and water, equilibrium in the system (SCHREINEMAKERS and FIGEE), A., ii, 983. fluoride, plastic (COHN), A., ii, 724. action of, on vanadium pentoxide (PRANDTL and MANZ), A., ii, 990. hydroxide, calcium chloride and water, equilibrium in the system (SCHREINEMAKERS and FIGEE), A., ii, 983. dry, absorption of the halogens by (WILKS), P., 308. nitrate as a manure (HENDRICK ; BAESSLER), A., ii, 650. nitrate and nitrite, estimation of (STUTZER and GOY), A., ii, 933. oxide (*lime*), specific heat of fused (LASCHTSCHENKO), A., ii, 253.

**Calcium oxide (*lime*),** equilibrium of, alumina and silica (SHEPHERD, RANKIN, and WRIGHT), A., ii, 725. solubility of, in solutions of sucrose (CLAASSEN), A., i, 606. solubility of, in solutions of sucrose and of glycerol (CAMERON and PATTEN), A., i, 179. and carbon, action of steam on a mixture of (VIGNON), A., ii, 391. sensitiveness of lupins towards (PFEIFFER and BLANCK), A., ii, 761. estimation of, in sugar refinery products (WEISBERG), A., ii, 659; (LINDET), A., ii, 664. phosphate metabolism. See Metabolism.

**Tricalcium phosphate**, action of sodium hydroxide on (OECHSNER DE CONINCK), A., ii, 396.

**Calcium silicates** in cement (SZATHMÁRY), A., ii, 40.

**Calcium organic compounds** :—

**Calcium bromocarbamide** (GEHE & Co.), A., i, 118. cyanamide (CARO, JACOBY, and SCHÜCK), A., i, 119. formation and decomposition of (LE BLANC and ESCHMANN), A., i, 185. as a manure (HENDRICK ; BAESSLER), A., ii, 650. assay of (MONNIER), A., ii, 668 ; (STUTZER), A., ii, 777.

**Calcium**, detection of barium, strontium, and lead (BROWNING and BLUMENTHAL), A., ii, 1032. estimation of small quantities of (BOWSER), A., ii, 1031. estimation of, in the presence of magnesium (LIESSE), A., ii, 154. estimation of, in blood (VOORHOEVE), A., ii, 126. estimation of, in urine (McCRUDDEN), A., ii, 1136. estimation of, in hard water (NOTH-NAGEL), A., ii, 1031. estimation of, physico-chemically, in wine (DUBOUX), A., ii, 228. separation of barium, strontium and (HORN VAN DEN BOS), A., ii, 228 ; (BIRNBRÄUER), A., ii, 770. separation of, from magnesium (MURMANN), A., ii, 440. separation of strontium from (MOSER and MACHIEDO), A., ii, 439 ; (HINDS), A., ii, 440.

**Callitris**, constituents of (BAKER and SMITH), A., i, 478.

**Callitrol** (BAKER and SMITH), A., i, 478.

**Callose**, detection of (TSVETT), A., ii, 946.

*iso***Calycanthine**, salts of a quaternary base from (GORDIN), A., i, 903.

**Camphane**, dinitro- (HENDERSON and HEILBRON), T., 1899 ; P., 249.

*iso***Camphane** (LIPP), A., i, 731.

**Camphane series**, studies in the (FORSTER and ZIMMERLI), T., 478 ; P., 50 ; (FORSTER, TROTTER, and WEINTROUBE), T., 1982 ; P., 259 ; (FORSTER and WITHERS), P., 327.

**Camphanethiotriazine** (FORSTER and ZIMMERLI), T., 489 ; P., 50.

**Camphenanic acid**, and bromo-, and hydroxy-, and their salts and derivatives (HENDERSON and SUTHERLAND), T., 1543 ; P., 211, 278.

**Camphene**, constitution of (HENDERSON and HEILBRON), T., 1901 ; P., 249 ; (ASCHAN), A., i, 794, 796, 797. oxidation of (HENDERSON and SUTHERLAND), T., 1541 ; P., 211 ; (KOMPPA), A., i, 388.

**Camphenephosphinic acid**, sodium salts, physiological action of (GARDNER and SYMES), A., ii, 314.

*trans-dl*-**Camphenic acid** and its diamide (ASCHAN), A., i, 797.

**Camphenilanaldehyde** semicarbazone (LIPP), A., i, 732.

*iso***Camphenilanaldehyde** and its semicarbazone (HENDERSON and SUTHERLAND), T., 1546 ; P., 211.

*iso***Camphenilanic acid**, bromo-, and its derivatives (HENDERSON and HEILBRON), T., 1894 ; P., 249.

**Camphenylnitroamine**. See Camphor, pernitroso.

**Campholactone**, constitution of (BREDT), A., i, 417.

*iso***Campholactone**, amino-, hydroxyl-amino-, and nitro-, and their salts and derivatives (NOYES and HOMBERGER), A., i, 110.

*apo***Campholic acid**, bromo-, and cyano- (KOMPPA), A., i, 642.

*dl-apo***Campholide** (KOMPPA), A., i, 642.

*alle***Campholytic acid**, constitution of (BREDT and MARRES), A., i, 416.

**Camphor**, specific rotation of, in acetone solution (MALOSSE), A., i, 730. influence of water on the rotatory power of, in solution (v. KAZAY), A., i, 892. transformation of borneol into, and its hydrogenation (ALOV and BRUSTIER), A., i, 730.

$\alpha'$ -derivatives of (MARSH), P., 283. analysis of (LENZ), A., ii, 665.

**Camphor**, estimation of, in smokeless powders (MARQUEYROL), A., ii, 774.

**Camphor**, chloro-, and its semicarbazone (HENDERSON and HEILBRON), T., 1895 ; P., 248.

*pernitroso*- (camphenylnitroamine), constitution and derivatives of (FORSTER, TROTTER, and WEINTROUBE), T., 1982 ; P., 259.

$\beta$ -**Camphor** (bornylone), synthesis of, and  $\beta$ -imino- (BREDT and HILBING), A., i, 657.

*i*-**Camphor**, pernitroso- (CASTELLANA and FERRERO), A., i, 217.

**Camphor series**, molecular rearrangements in the (NOYES and HOMBERGER : NOYES and KNIGHT), A., i, 110, 111.

**Camphor wood**, false, oil from (SEMMLER and ZAAR), A., i, 388.

*beta*-*iso***Camphoramic acid** (NOYES and KNIGHT), A., i, 111.

**Camphorbenzoylhydrazone** (FORSTER, TROTTER, and WEINTROUBE), T., 1992.

**Camphorcarboxylic acid**, dithio-, and its methyl ester and copper salt (TSCHUGAEFF and PIGOULEWSKY), A., i, 797.

**Camphoramic acid**, synthesis of (KOMPPA), T., 29 ; (BLANC and THORPE), T., 2010 ; P., 265. salts of (HILDITCH), T., 236.

*iso***Camphoramic acid**, methyl esters of (NOYES and KNIGHT), A., i, 111.

**Camphoroxalic acid**, dibenzylamine salt and other derivatives of (TINGLE and BATES), A., i, 55.

**Camphorquinone** and *pernitroso*- phenylhydrazones and *p*-bromo- and *p*-nitrophenylhydrazones of, and their derivatives (FORSTER, TROTTER, and WEINTROUBE), T., 1985. absorption spectra of the hydrazones and semicarbazones of (LANKSHEAR and LAPWORTH), T., 1785 ; P., 224.  $\alpha$ - and  $\beta$ -phenylhydrazones and  $\alpha$ - and  $\beta$ -thiosemicarbazones of (FORSTER and ZIMMERLI), T., 483 ; P., 50. benzoyl derivative of the phenylhydrazone of (AUWERS, DANNEHL, and BOENNECKE), A., i, 171.

**Camphorquinoneoxime**, *pernitroso*- and its benzoyl derivative (FORSTER, TROTTER, and WEINTROUBE), T., 1989.

**Camphorquinonephenylthiocarbamylhydrazone** (FORSTER and ZIMMERLI), T., 490 ; P., 50.

**Camphorsulphonic acid**, yttrium salt (PRATT and JAMES), A., ii, 893.

**d-Camphorsulphonic acid**, *α*-*p*-hydroxy-, optically active phenylethylamine salts of, and their benzoyl derivatives (MOORE), T., 419; P., 42.

**d-and l-Camphorsulphonic acids**, bromo-, *d*- and *l*-narcotine salts of (PERKIN and ROBINSON), T., 788.

**d- and l-β-Camphorsulphonic acids**, *l*-menthyl esters of (TSCHUGAEFF), A., ii, 787.

**Camphor- $\pi$ -sulphonic acid**, salts of (HILDITCH), T., 236.

**Camphor- $\beta$ -thiosulphonic acid** and its sodium salt and anhydride (HILDITCH), A., i, 892.

**Camphorylidenecyanooacetic acid** and its esters (FORSTER and WITHERS), P., 327.

**Camphylidenehydrazine** and its hydrochloride (KIJNER), A., i, 679.

**Canal rays**. See under Photochemistry.

**Cancer**, peptide-splitting ferments of gastric contents in (HALL and WILLIAMSON), A., ii, 310.

**Cancrinite**, chemistry of (THUGUTT), A., ii, 298.

**Cantharidin**, estimation of, in cantharides (EMDE), A., ii, 669.

**Caoutchouc**, chemistry of (SPENCE and SCOTT), A., i, 801.

Pára, carbohydrate constituents of (PICKLES and WHITFIELD), P., 54.

synthetic, preparation of (HARRIES), A., i, 798.

preparation of substances resembling (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 1003.

absorption of gases by (REYCHLER), A., ii, 19.

action of chromyl chloride on (SPENCE and GALLETTY), A., i, 314.

action of, on antiseptic mercury solutions (GLENNY and WALPOLE), A., ii, 141.

vulcanisation of (BYSOFF), A., i, 314, 390; (HINRICHSEN), A., i, 550; (SPENCE and SCOTT), A., i, 657.

action of sulphur on the vulcanisation of (BARY and WEYDERT), A., i, 1003.

nitrosites of (ALEXANDER), A., i, 389.

estimation of (HINRICHSEN and KINDSCHER), A., ii, 445; (KORNECK: BUDDE: FENDLER: HARRIES: BECKER), A., ii, 545; (SPENCE, GALLETTY, and SCOTT), A., ii, 1035; (HÜBENER: BECKER), A., ii, 1036.

estimation of, in vulcanised rubber materials (HÜBENER), A., ii, 231.

vulcanised, assay of (ESCH), A., ii, 946.

**Caoutchouc-seed oil**, Pára, composition of (PICKLES and HAYWORTH), A., ii, 1024.

**Capillary analysis**. See under Analysis.

**Capillary-chemical problems**, investigation of (v. WEIMARN), A., ii, 259.

**Capsaicin**, extraction of (NELSON), A., ii, 551.

**Capsicum**, detection of (NELSON), A., ii, 551.

**Carane** and its bromo-derivative (KIJNER and ZAVADOVSKY), A., i, 1028.

**Carbamide**, preparation of derivatives of (JÄGER), A., i, 1027.

acetylation of (BÖESEKEN and LANGEZAAL), A., i, 22.

sublimation of (ESCALES and KÖPKE), A., i, 530.

transformation of ammonium cyanate into (CHATTAWAY), P., 280.

**Carbamide**, chloro- (BÉHAL and DETEUF), A., ii, 957.

dichloro-, formation of, and its behaviour with amines (DATTA), P., 264.

**Carbamides**, detection of (FENTON and WILKS), A., i, 269.

*as*-**Carbamidedicarboxylic acid**, ethyl and methyl esters (DIELS and GOLLMANN), A., i, 956.

**4-Carbamidomethylglyoxalone** (FRANCHIMONT and DUBSKY), A., i, 239.

**1-Carbamido-3-methylpyrazole-4-azo-benzene-4'-*p*-azosalicylic acid, 5 hydroxy** (BÜLOW and HAAS), A., i, 340.

*α*-**Carbamido-β-*p*-tolylpropionic acid**, (DAKIN), A., ii, 416.

**Carbamidotartronic acid**, ethyl ester (CURTISS and STRACHAM), A., i, 354.

**1-Carbamido-2:3:5-trimethylpyrrole-4-carboxylic acid**, ethyl ester (KORSCHUN and ROLL), A., i, 502.

**Carbaminoacetic acid**, *dithio*-ethylester and its mercury salts (LES ÉTABLISSEMENTS POULENC FRÈRES and FOURNEAU), A., i, 841.

**Carbamino-reaction**, physiological importance of the (SULZER), A., ii, 128.

**5-Carbamyl-4:4-dimethyl-2-piperidone**, 6-imino-3-cyano-, and its platinum chloride (THOLE and THORPE), T., 430.

*α*'-**Carbamylcyclohexane-1:1-diacetic acid**, *α*-cyano-, *ω*-imide and *ω*-imino-imide of and their derivatives (THOLE and THORPE), T., 443.

**5-Carbamyl-4-methyl-4-ethyl-2-piperidone**, 6-imino-3-cyano- (THOLE and THORPE), T., 437.

**3-Carbamylmethyl-5-pyrrolidone-3-carboxylic acid**, 2-imino-, ethyl ester (THOLE and THORPE), T., 1688.

**$\beta$ -Carbamylphenylmethylaminoerotonic acid**, ethyl ester (CLARKE and FRANCIS), T., 322.

**Carbanilido- $\beta$ -carbanilidophenylhydrazine,  $\alpha$ -thio-** (BUSCH and LIMPACH), A., i, 690.

**Carbanilido- $\beta$ -carbanilido-*o*-, and *p*-tolylhydrazine,  $\alpha$ -thio-** (BUSCH and LIMPACH), A., i, 690.

**Carbazinic acid, dithio-**, aromatic esters of (BUSCH and KRAPF), A., i, 812.

**Carbazole**, compound of, with magnesium ethyl iodide (ODDO), A., i, 488.

**Carbazole series**, studies in the (SCHWALBE and WOLFF), T., 103.

**Carbazole-9-carboxylic acid**, ethyl ester (diphenyleneurethane) (ODDO), A., i, 489.

**Carbazole-3:6-diphthaloylic acid** (SCHOLL and NEOVIUS), A., i, 567.

**Carbazoledisulphonic acid**, potassium salt and derivatives of, and 3-amino-, potassium salt, and 3-nitro-, barium salt (SCHWALBE and WOLFF), T., 105.

**$\omega$ -Carbethoxyaminoacetophenone** (MANNICH and HAHN), A., i, 648.

**$\omega$ -Carbethoxyaminomethylphenylcarbinol** (MANNICH and HAHN), A., i, 649.

**1-Carbethoxyamino-8-*op*-dinitroanilino-naphthalene** (SACHS and FORSTER), A., i, 734.

**$\alpha$ -Carbethoxyamino- $\alpha$ -phenylacetamide** (CLARKE and FRANCIS), T., 322; P., 22.

**$\alpha$ -Carbethoxyamino- $\alpha$ -phenylacetic acid** (CLARKE and FRANCIS), T., 322.

**Carbethoxyaminotartronic acid**, ethyl ester, and its disodium salt (CURTISS and STRACHAM), A., i, 353.

**$\gamma$ -Carbethoxy- $\alpha$ -benzylglutaconic acid**, ethyl ester (THOLE and THORPE), T., 2200.

**Carbethoxy- $\alpha$ -dimethylglutaconic acid**, esters of (THOLE and THORPE), T., 2202.

**Carbethoxy- $\alpha$ -ethylglutaconic acid**, ethyl ester (THOLE and THORPE), T., 2199.

**Carbethoxyglycine**, cyano-, methyl ester (DIELS and GUKASSIANZ), A., i, 24.

**Carbethoxyl group**, cause of elimination of, as ethyl carbonate (THOLE and THORPE), T., 2183; P., 252.

**Carbethoxy- $\gamma$ -methyl- $\alpha$ -ethylglutaconic acid**, ethyl ester (THOLE and THORPE), T., 2204.

**Carbethoxy- $\alpha$ -methyl- $\gamma$ -ethylglutaconic acid**, ethyl ester (THOLE and THORPE), T., 2205.

**Carbethoxy- $\alpha$ -methylglutaconic acid**, ethyl ester, and its sodium salt (THOLE and THORPE), T., 2197.

**5-Carbethoxypyrimidine-2-thioglycolic acid, 6-amino-** (JOHNSON and AMBLER), A., i, 576.

**Carbides**, crystallography of (DE SCHULTEN), A., ii, 486.

**Carbimidecarboxylic acid**, methyl ester (DIELS and GOLLMANN), A., i, 956.

**Carbinols**, asymmetric (MELDOLA and KUNTZEN), T., 1283, 2034; P., 157, 263.

**Carbithionic acids** (HÖHN and BLOCH), A., i, 48.

**Carbohydrate metabolism**. See under Metabolism.

**Carbohydrates**, photochemical synthesis of (STOKLASA and ZDOBNIKÝ), A., i, 178; (LÓB), A., i, 263; (INGHILERI), A., i, 354.

photochemical synthesis of, in absence of chlorophyll (STOKLASA and ZDOBNIKÝ), A., i, 769.

mutarotation and electrical conductivity of (RABE and ROY) A., i, 14.

nomenclature of the (VOTOČEK), A., i, 179.

formation of, from fat in the animal organism (JUNKERSDORF), A., ii, 127.

soluble, in asparagus roots (MORSE), A., ii, 324.

occurring in seeds (SCHULZE and PFENNINGER), A., i, 17.

oxidation of, by air (DEL ROSARIO), A., i, 605.

biological degradation of (FERNBACH), A., ii, 62.

degradation of, in the liver (WIRTH), A., ii, 629.

rôle of, in creatine and creatinine metabolism (MENDEL and ROSE), A., ii, 1002.

influence of, on the sparing of protein in inanition (WIMMER), A., ii, 1003.

addition of, to soils (HUTCHINSON and MARR), A., ii, 430.

assimilation of different, by different yeasts (LINDNER and SAITO), A., ii, 758.

effect of injury to the pituitary body on tolerance for (GOETSCH, CUSHING, and JACOBSON), A., ii, 745.

phosphoric acid esters of (CARRÉ), A., i, 263; (NEUBERG and KRETSCHMER), A., i, 887.

estimation of, by oxidation (GREIFENHAGEN, KÖNIG, and SCHOLL), A., ii, 1037.

**$\alpha$ -Carbomethoxyamino- $\alpha$ -phenylacetamide** (CLARKE and FRANCIS), T., 322.

**Carbon**, green band in spectrum of (KOMP), A., ii, 1041.

**Carbon**, anode. See Anode under Electrochemistry.  
 melting of (WATTS and MENDENHALL), A., ii, 881.  
 cementation of iron by (CHARPY and BONNEROT), A., ii, 1091.  
 solubility of, in iron (RUFF and GOECKE; RUFF), A., ii, 897.  
 action of, on chromyl chloride (RODRIGUEZ MOURELO and GARCIA BANUS), A., ii, 731.  
 and lime, action of steam on a mixture of (VIGNON), A., ii, 391.  
 and nitrogen, gaseous compounds of (LIDOFF), A., i, 429.  
 assimilation of, by plants (MAQUENNE), A., ii, 761.  
**Carbon alloys** with iron (RUER and ILJIN), A., ii, 494; (GONTERMANN), A., ii, 1091.  
 precipitation of carbon from (HATFIELD), A., ii, 401.  
 and chromium (ARNOLD and READ), A., ii, 1092.  
**Carbon tetrabromide**, action of, on organic bases (DEHN and DEWEY), A., i, 914.  
 tetrachloride, specific heat of, and of its saturated vapour (MILLS and MACRAE), A., ii, 186.  
 monoxide, spectrum of (WOLTER), A., ii, 678.  
 effect of temperature on the dissociation equilibrium of (RHEAD and WHEELER), T., 1140; P., 126.  
 formation of hydrocarbons from (VIGNON), A., i, 101.  
 photochemical and thermal reaction of chlorine with (CHAPMAN and GEE), T., 1726; P., 56, 223.  
 detection of, by means of blood (FRANZEN and v. MAYER), A., ii, 1029.  
 detection of, in tissues after death (DE DOMINICIS), A., ii, 439.  
 dioxide, amount of, in the atmosphere at Monte Video (SCHRÖDER), A., ii, 1086.  
 ultra-red absorption spectrum of (HERTZ), A., ii, 830.  
 apparatus for the generation of (PURRMANN and VERBEEK), A., ii, 878.  
 solubility of, in beer (FINDLAY and SHEN), T., 1313; P., 189.  
 alkaline-earth carbonates and water, equilibrium between (McCoy and SMITH), A., ii, 380.  
 equilibrium of condensation of nitrobenzene with (KOHNSTAMM and REEDERS), A., ii, 1077.

**Carbon dioxide**, and methyl ether or methyl alcohol, fusibility curves of mixtures of (BAUME and PERROT), A., ii, 696.  
 behaviour of, in the electric flame (MUTHMANN and SCHAIHDHAUF), A., ii, 790.  
 rôle of, in bleaching processes (HIGGINS), T., 858; P., 67.  
 action of, on bleaching powder (TAYLOR), T., 1906; P., 243.  
 absorption of, by caoutchouc and by blood charcoal (REYCHLER), A., ii, 19.  
 pyrogenic reactions of, with carbon disulphide and hydrogen sulphide (MEYER and SCHUSTER), A., ii, 721.  
 output of, during decerebrate rigidity (ROAFL), A., ii, 503.  
 assimilation of, by green plants (GRAFE), A., ii, 521.  
 estimation of expired (BENEDICT and HOMANS), A., ii, 408.  
 estimation of, in expired air, in town and country (THOMSON), A., ii, 408.  
 estimation of, in water (TILLMANS and HEUBLEIN), A., ii, 70.  
**Carbonic acid**, aloin salts of (VEREINIGTE CHININFABRIKEN ZIMMER & Co.), A., i, 480.  
 effect of heat on mixed esters of (EINHORN and ROTHLAUF), A., i, 703.  
 alkyl aryl esters of (EINHORN and SEUFFERT), A., i, 54.  
 2-*d*-bromo-4-nitro-*m*-tolyl ethyl ester (RAIFORD), A., i, 993.  
 chlorotolyl esters of (RASCHIG), A., i, 636.  
*p*-nitrophenyl ethyl ester (DANIEL and NIERENSTEIN), A., i, 371.  
**Carbonic acid, dithio-**, dimethyl ester, phosphorescence of (HERNÁNDEZ and CAMPO Y CERDAN), A., i, 174.  
 isomeric hydrazones of aromatic esters of (BUSCH and KRAPF), A., i, 811.  
 trithio-, phenyl ester (CASOLARI), A., i, 197.  
**Carbonates**, alkalinity of aqueous solutions of (AUERBACH and PICK), A., ii, 1078.  
 fusion of, with sodium paratungstate (GOOCH and KUZIRIAN), A., ii, 657.  
**Carbon disulphide**, action of, on amino-acids (SIEGFRIED and WEIDENHAUPT), A., i, 116.  
 nitrogen and sulphur derivatives of (DELÉPINE), A., i, 23, 944.

**Carbon** disulphide, pyrogenic reactions of carbon dioxide with, and hydrogen sulphide (MEYER and SCHUSTER), A., ii, 721.

telluride (STOCK and BLUMENTHAL), A., ii, 722.

**Carbon**, apparatus for estimating, in iron (BUTZBACH and FENNER), A., ii, 937.

estimation of, in iron alloys (STADELER), A., ii, 538.

estimation of, in iron and steel (WENNEMANN), A., ii, 1026; (AUGUSTIN), A., ii, 1029.

estimation of, in organic compounds (FRANKLAND), P., 309.

estimation of, in steel (MAHLER and GOUTAL : DE NOLLY), A., ii, 937.

estimation of, in organic compounds (FRANKLAND), T., 1783; P., 207; (TANGL and v. KERESZTY), A., ii, 538.

**Carbon atom**, asymmetric "quaternary," optical properties of compounds containing an (INGLIS), T., 538; P., 46.

**Carbon-nitrogen** linking (EMDE and RUNNE), A., i, 714, 718.

**Carbonyl group** in the nascent state (STEWART), A., i, 210; (PETRENKO-KRITSCHENKO), A., i, 725.

**Carbonyl** chloride, action of, on indoxyl (GESELLSCHAFT FÜR CHEMISCHE INDUSTRIE IN BASEL), A., i, 675.

action of, on metallic sulphides (CHAUVENET), A., ii, 602.

**Carboxyldi-*as*-dimethylcarbamide** (BORNWATER), A., i, 617.

**Carboxylferrocyanides** (LECOQ), A., i, 269.

**Carborundum** furnace, temperature measurements in a (GILLETT), A., ii, 486.

1-*o*-Carboxyanilinoanthraquinone, 4-chloro- (ULLMANN and BILLIG), A., i, 491.

**Carboxybenzeneazoacetoacetic acid**, nitro-, ethyl ester and its oxime (BÜLOW and HECKING), A., i, 245.

*o*-Carboxybenzeneazodimethyl-*α*-naphthylamine and its sodium salt (HOWARD and POPE), T., 1335.

*o*-Carboxybenzeneazodiphenylamine and its sodium salt (HOWARD and POPE), T., 1334.

4-*o*-Carboxybenzeneazo-5-hydroxy-3-methylisoxazole (BÜLOW and HECKING), A., i, 245.

4-*o*-Carboxybenzeneazo-5-hydroxy-3-methylpyrazolone (BÜLOW and HECKING), A., i, 405.

4-*o*-Carboxybenzeneazo-5-hydroxy-1-phenyl-3-methylpyrazole, and 4-nitro- (BÜLOW and HECKING), A., i, 405.

*o*-Carboxybenzeneazo-*α*-naphthylamine and its sodium salt (HOWARD and POPE), T., 1335.

*α*-*o*-Carboxybenzeneazo-*β*-oximinoacetic acid, ethyl ester (BÜLOW and HECKING), A., i, 245.

*o*-Carboxybenzeneazophenyl-*α*-naphthylamine and its sodium salt (HOWARD and POPE), T., 1336.

4-*o*, *m*-, and *p*-Carboxybenzeneazo-3-phenylisoxazolone (MEYER), A., i, 341.

*O*-Carboxy- $\beta\beta$ -dicyano-*α*-hydroxy- $\Delta\alpha$ -pentenoic acid, anil of (DIECKMANN), A., i, 457.

*O*-Carboxy- $\beta$ -cyano-*α*-hydroxy- $\beta$ -phenylpropenoic acid, anil of (DIECKMANN), A., i, 456.

2'-Carboxy-2:5-dimethoxydiphenyl sulphide (CLARKE and SMILES), T., 1537.

2'-Carboxydiphenylsulphide, 2:5-dihydroxy- (CLARKE and SMILES), T., 1537; P., 212.

3'- and 4'-Carboxydiphenyl ether, 2:4-diamino- (FARBENFABRIKEN VORM. F. BAYER & CO.), A., i, 456.

2'-Carboxy-4-ethoxyphenylthiolacetic acid (LESSER), A., i, 456.

2'-Carboxy-5-ethylthiophenylthiolacetic acid (LESSER), A., i, 456.

$\beta$ -Carboxyglutaconic acid,  $\alpha$ -amino-ethyl ester (WISLICENUS and WALDMÜLLER), A., i, 603.

2'-Carboxyindole-3-acetic acid, ethyl ester (WISLICENUS and WALDMÜLLER) A., i, 604.

**Carboxylase** (NEUBERG and KARZAG) A., ii, 1020.

2'-Carboxy-5-methoxyphenylthiolacetic acid (LESSER), A., i, 456.

Carboxymethylaminolauronic acid (WEIR), T., 1273; P., 154.

2'-Carboxymethylthiol-4- and -5-acetylaminobenzoic acid (KALLE & Co.), A., i, 667.

2'-Carboxymethylthiol-4-ethylthiobenzoic acid (KALLE & Co.), A., i, 667.

2'-Carboxymethylthiol-4-, and 5-ethylxanthatobenzoic acid (KALLE & Co.), A., i, 667.

2'-Carboxymethylthiol-5-methoxybenzoic acid (KALLE & Co.), A., i, 666.

2'-Carboxymethylthiol-5-methylthiobenzoic acid (KALLE & Co.), A., i, 667.

3'-Carboxy-1-phenyl-5-acetoxyphthalide-4-acetic acid, anhydride and ethyl ester of (WISLICENUS and WALDMÜLLER), A., i, 603.

**Carboxyphenylaminoacetic acid**, *dithio-*, benzyl hydrogen ester and its barium salt (SIEGFRIED and WEIDENHAUPT), A., i, 117.

**m-Carboxyphenylcamphoformeneamine** (TINGLE and BATES), A., i, 55.

**m-Carboxyphenylcamphoformeneamine-carboxylic acid** (TINGLE and BATES), A., i, 55.

**p-Carboxy-p-phenylglycinamide** (EINHORN and SEUFFERT), A., i, 46.

**p-Carboxyphenylglycinediethylamino-methylamide**, ethyl ester (EINHORN and SEUFFERT), A., i, 45.

**p-Carboxyphenylglycinepiperidino-methyl amide**, ethyl ester, and its salts (EINHORN and SEUFFERT), A., i, 45.

**o-Carboxyphenylglycollic acid**, ethyl ester and amides of (MERRIMAN), T., 912; P., 102.

**2-Carboxyphenylthiolacetic acid**, 4- and 5-amino-, acetyl derivatives (KALLE & Co.), A., i, 1010.

5-chloro-, acetyl derivative, and 5-chloro- (LESSER), A., i, 456.

5-dichloro- (KALLE & Co.), A., i, 871.

**2-Carboxyphenylxanthic acid**, 5-chloro-, ethyl ester (LESSER), A., i, 456.

**$\beta$ -Carboxypropionylacetocetic acid**, ethyl ester, bisphenylhydrazone, phenylhydrazine salt of (SCHEIBER and LUNGWITZ), A., i, 836.

**Carbylamines**, action of azoimide on (OLIVERI-MANDALA and ALAGNA), A., i, 243.

**Carnaubic acid**, methyl ester and lead salt of (MEYER and ECKERT), A., i, 106.

**Carnosine**, constitution of (v. GULEWITSCH), A., i, 815.

**Carvacrolphthalein** (EHRLICH), A., i, 130.

**Carvone**, hydrogenation of (VAVON), A., i, 730.

action of magnesium ethyl iodide on (VANIN), A., i, 474.

hydrosulphide, action of hydrogen cyanide on (STEELE), P., 240.

**Caryophyllene**, regeneration of (SEMMLER and MAYER), A., i, 78.

**Casein**, refractive index of (ROBERTSON), A., i, 341.

measurement of the osmotic pressure of, in alkaline solution (MOORE, ROAF, and WEBSTER), A., ii, 1072.

combination of lactic acid and (VAN DAM), A., i, 91, 407.

digestion of (GAUCHER), A., ii, 1109.

tryptic digestion of (SIEGFRIED), A., ii, 126.

**Casein**, hydrolysis of (OSBORNE and GUEST), A., i, 589.

action of pepsin on the products of hydrolysis of (ROBERTSON and BIDDLE), A., i, 589.

action of intestinal juice on the products of digestion of (LONDON), A., ii, 1000.

**Casein, iodo-**, preparation of 3:5-di-iodotyrosine from (OSWALD), A., i, 1050.

**Caseinogen**, electrochemical equivalent of (ROBERTSON), A., i, 407.

**Caseinogenates** of potassium and of the alkaline earths, conductivity of (ROBERTSON), A., ii, 460.

**Casimiroa edulis**, constituents of the seeds of (POWER and CALLAN), T., 1993; P., 257.

**Casimiroeine** and its aurichloride (POWER and CALLAN), T., 1999; P., 258.

**Casimiroic acid** and its derivatives (POWER and CALLAN), T., 2004; P., 258.

**Casimiroine** and its derivatives (POWER and CALLAN), T., 1996; P., 258.

**Casimiroitine** (POWER and CALLAN), T., 1997; P., 258.

**Casimirolid** (POWER and CALLAN), T., 2004; P., 258.

**Cassia fistula**, constituents of the pulp of (GRIEBEL), A., ii, 425.

**Cassiterite**, structure and electrical properties of (LIEBISCH), A., ii, 498.

**Castor oil seeds**, enzymatic action of (KRAUSZ), A., ii, 526.

**Catalase**, preparation of, from blood (WOLFF and DE STECKLIN), A., i, 412.

inhibitory action of inorganic salts on (FAVRE), A., i, 592.

of milk (SPINDLER), A., ii, 133.

of plants, function of (ZALESKI and ROSENBERG), A., ii, 643

of sea-urchin's eggs before and after fertilisation (AMBERG and WINTERNITZ), A., ii, 1110.

detection of (LOEW), A., i, 828.

estimation of (LAXA), A., ii, 675.

**Catalysis**. See under **Affinity**, chemical.

**Catalysts**, specific stereochemical behaviour of (ROSENTHALER), A., ii, 384.

influence of foreign substances on the activity of (IPATIEFF), A., i, 31; (PAAL and KARL), A., ii, 479.

relation of inorganic, to haemoglobin derivatives (MADELUNG), A., i, 411.

influence of, in vapour density determinations (KLING), A., ii, 371.

**Catechol**, presence of, in plant extracts (WHELDALE), A., ii, 818.

**Catechol**, compound of, with phenazine (ZEREWITINOFF and v. OSTROMISS-LENSKY), A., i, 849.

*o*- and *p*-chloro-, and 4:5-dichloro-, salts of (WILLSTÄTTER and MÜLLER), A., i, 729.

**Cathode rays**. See under Photochemistry.

*Caulerpa prolifera*, proliferation of (MICHEELS), A., ii, 526.

**Caulophylin** (GILBARD), A., ii, 670.

**Cell** division, physiology of (LILLIE), A., ii, 128.

galvanic. See under Electrochemistry.

living, formation of nitrous acid in the (MAZÉ), A., ii, 643, 918.

**Cells**, chemical conditions necessary for the maintenance of the normal structure of (WIDMARK), A., ii, 56.

turbid swelling of (FISCHER), A., ii, 309.

animal germ, action of mesothorium on (HERTWIG), A., ii, 1118.

concentration. See under Electrochemistry.

vegetable, selective power of, for dextrose and levulose (LINDET), A., ii, 422.

**Cellase**, influence of temperature on the activity of (BERTRAND and COMPTON), A., i, 99.

influence of the medium on the activity of (BERTRAND and COMPTON), A., i, 825.

**Cellobiose** and its phenylosazone (SCHLIEMANN), A., i, 180.

**Cellonic acid** nitrate and its derivatives (BERL and FODOR), A., i, 265.

**Cellulose**, preparation of, by the sulphate method (KLASON and SEGERFELT), A., i, 264.

new solvents for (DEMING), A., i, 771.

viscosity of solutions of (OST), A., i, 838.

acetolysis of (SCHLIEMANN), A., i, 179; (SCHWALBE), A., i, 712.

conversion of, to hydrocellulose (JENTGEN), A., i, 115, 355; (SCHWALBE), A., i, 115, 712.

electrolytic decomposition of (OERTEL), A., i, 607.

interaction of, and formic acid (CROSS and BEVAN), T., 1450; P., 149.

action of water and alkali on impure (SCHWALBE and ROBINOFF), A., i, 180.

production of dextrose from the digestion of (LUSK), A., ii, 311.

preparation of viscose from (OST, WESTHOFF, and GESSNER), A., i, 710.

demonstration of the reducing properties of (SCHOLL), A., i, 525.

**Cellulose**, tunicate, partial hydrolysis of (ABDERHALDEN and ZEMPLÉN), A., i, 525.

reaction of, with dimethylaniline (WALTER), A., i, 124.

mercerisation of (MILLER), A., i, 17, 355; (CROSS: SCHWALBE), A., i, 114.

acetate (OST: EICHENGRÜN), A., i, 712.

**Cellulose nitrates** and acetates, absorption spectra of (DE MOENTHAL), A., i, 711.

nitrate, viscosity of solutions of (PIEST), A., ii, 586.

products of the alkaline solutions of (BERL and FODOR), A., i, 264, 265.

nitrous esters of (MARQUEYROL and FLORENTIN), A., i, 355.

**Celtium**, new element from the gadolinite earths (URBAIN), A., ii, 115.

**Cement**, specific gravity of (BORCH), A., ii, 539.

hydration and hardening of (ROHLAND), A., ii, 881.

variation in the velocity of hydration of (ROHLAND), A., ii, 605.

calcium silicates in (SZATHMÁRY), A., ii, 40.

Portland, constitution of (SHEPHERD, RANKIN, and WRIGHT), A., ii, 725.

chemical action of sea-water on (POIRSON), A., ii, 204.

rapid estimation of ferric oxide in (GOLUBINZEFF), A., ii, 938.

**Cephalopods**, occurrence of betaine in the muscle of (HENZE), A., ii, 216.

**Cereals**, estimation of pentosans and methylpentosans in (ISHIDA and TOLLENS), A., ii, 645.

**Cerebrin** and its derivatives (BARBIERI), A., ii, 413.

**Cerebroin** (BARBIERI), A., ii, 413.

**Cerebrosides**, isolation of, from brain (SMITH and MAIR), A., i, 44.

effect of glycerol on the clearing point of (SMITH and MAIR), A., i, 44.

of the brain (LOENING and THIERFELDER), A., i, 898.

**Cerebro-spinal fluid**, chemical composition of (MESTREZAT), A., ii, 811.

trimethylamine in (DORÉE and GOLLA), A., ii, 212.

**Cerium alloys** with tin (VOGEL), A., ii, 1090.

**Cerous thallous nitrate** (JANTSCH and WIGDOROW), A., ii, 115.

**Cerium sulphate**, crystallography of the tetrhydrate of (ROSATI), A., ii, 984.

**Cerium alkali sulphates** (BARRE), A., ii, 42.  
 decomposition of (BROWNING and BLUMENTHAL), A., ii, 890.

**Cerium**, separation of (ROBERTS), A., ii, 541 ; (JAMES and PRATT), A., ii, 935.

**Cerotone** and its oxime (EASTERFIELD and TAYLOR), T., 2302 ; P., 279.

**Cetyl cyanide**. See *Heptadeconitrile*.

**S-Cetyl-d-glucoside** and its tetra-acetyl derivative (FISCHER and HELFERICH), A., i, 802.

**Chabazite** (SMITH), A., ii, 501.

**Chalcedony**, specific heat of (LASCHTSCHENKO), A., ii, 253.

**Chalk waters**. See under Water.

**Champaca oil**, constituents of (BROOKS), A., i, 1000.

**Charcoal**, absorption of iodine by (CORRIDI), A., ii, 1083.  
 absorption of substances by (FREUNDLICH and MASIUS), A., ii, 374.  
 blood, absorption of gases by (REYCHLER), A., ii, 19.

adsorption of methylene-blue and crystal-ponceau by (PELET-JOLIVET and SIEGRIST), A., ii, 374.

decolorising action of (KNECHT), A., ii, 471.

**Cheese**, transformation of proteins into fats during the ripening of (NIERENSTEIN), A., ii, 326.

tyrosine crystals in (DOX), A., ii, 429.

*Cheiranthus Cheiri* (wallflower), oil from (KUMMERT), A., i, 658.

*Chelone imbricata*, constituents of the shield of (BUCHTALA), A., ii, 1009.

**Chemical action**. See under *Affinity, chemical*.

compounds, spectroscopic evidence for the formation of (RUFF), A., ii, 237.

properties of (KURILOFF), A., ii, 873.

relation between the physical properties of, and the chemical attraction in their molecules (MARTIN), A., ii, 793.

relation between the physical properties of, with special reference to their densities (TER-GAZARIAN), A., ii, 1066.

reactions between, and living muscle-proteins (VELEY), T., 180 ; P., 3.

constitution, use of the magnetic field in determining (PASCAL), A., ii, 91, 183, 251, 252, 464, 850, 1058.

determination of by optical methods (AUWERS and EISENLOHR), A., ii, 781, 782.

**Chemical constitution** and absorption spectra, relation between (CRYMBLE, STEWART, WRIGHT, and GLENDINNING), T., 451 ; P., 46.  
 and colour (PAWLEWSKI), A., i, 480.

and hypnotic action (REMFRY), T., 610 ; P., 72.

and optical activity (INGLIS), T., 538 ; P., 46.

and physiological activity, relation between (EMDE), A., ii, 313 ; (HEUBNER), A., ii, 515.

relation between, and reactivity of nitrogen compounds (CLARKE), T., 1927 ; P., 243.

and rotatory power (PICKARD and KENYON), T., 45 ; P., 324 ; (HILDITCH), T., 218, 224 ; P., 6.

and specific gravity (EARL), A., ii, 17.

relation of the velocity of chlorination of aromatic compounds to (ORTON and KING), T., 1369, 1377 ; P., 196.

reactions, electrical induction in (WINSTON), A., ii, 692.

production of ions during (REBOUL), A., ii, 692.

**Chemistry**, forensic, recent advances in (DENNSTEDT), A., ii, 224.

theoretical, arbitrary distinctions in (MALFITANO), A., ii, 377.

*Chenopodium*, constituents of the oil of (NELSON), A., i, 797.

**Cherry-laurel water**, composition of (WIRTH), A., i, 875.

loss of hydrocyanic acid from (ASTRUC), A., ii, 921.

**Chestnut flour**, constituents of (LEONCINI), A., ii, 1023.

**Chicory**. See *Cichorium intybus*.

**Children**, sleeping, energy changes in (HOWLAND), A., ii, 1005.

**Chitin**, formation of lœvulic acid from (HAMBURGER), A., i, 834.

**Chitose**, formation of lœvulic acid from (HAMBURGER), A., i, 834.

**Chloral**, compounds of, with amides (CHEMISCHE FABRIK GEDEON RICHTER), A., i, 836.

chloroacetate (GABUTTI), A., i, 261.

assay of (BOURDET), A., ii, 943.

**Chloralhydrazide** (KNÖPFER), A., i, 1034.

**Chloralose**, dichloro- and other derivatives of (HANRIOT and KLING), A., i, 524.

**Chloraloses**, action of alkalis on (HANRIOT and KLING), A., i, 524, 525.

**Chloraloxime**, decomposition of with alkali hydroxide (PALAZZO and FAZIO), A., i, 421.

**Chloralurethane** and its derivatives (DIELS and GUKASSIANZ), A., i, 24.

**Chlorapatite** (CAMERON and McCAUGHEY), A., ii, 734.

**Chlorates.** See under Chlorine.

**Chlorides.** See under Chlorine.

**Chlorination**, new method of (ORTON and KING), T., 1185; P., 139.

of aromatic compounds, relation of the velocity of, to constitution (ORTON and KING), T., 1369, 1377; P., 196.

**Chlorine**, amount of, in the animal body and in the human foetus (ROSEMANN), A., ii, 1110.

atomic weight of, determined by electrolytic methods (GOLDBAUM), A., ii, 271.

action of light on (KÜMPELL), A., ii, 796.

magneto-optical effects of (HEURUNG), A., ii, 963.

electrode potentials in the manufacture of (SACERDOTI), A., ii, 789.

flame, electrical and optical behaviour of the (FRANCK and PRINGSHEIM), A., ii, 574.

equilibrium of, with ether (MCINTOSH), A., i, 256.

calorimetric experiments with (ESTREICHER and STANIEWSKI), A., ii, 16.

electrode. See Electrode under Electrochemistry.

photochemical and thermal reaction of, with carbon monoxide (CHAPMAN and GEE), T., 1726; P., 53, 223.

action of, on alkalis (TAYLOR), T., 1906; P., 243.

action of, on phenols (ZINCKE, FROHNEBERG, and KEMPF), A., i, 439.

**Hydrochloric acid**, conductivity of, and of its mixtures with sodium chloride (BRAY and HUNT), A., ii, 688.

temperature-coefficient of the electrical conductivity of, in alcoholic solution (PARTINGTON), T., 1937; P., 247.

equilibrium of, with methyl alcohol (BAUME and PAMFIL), A., i, 414.

equilibrium of the reaction of *p*-benzoquinone with (SCHMIDLIN), A., i, 727.

**Chlorides**, anhydrous, preparation of (CHAUVENET), A., ii, 109.

precipitation of, by hydrochloric acid (GIBSON and DENISON), A., ii, 203.

estimation of, in blood (OPPLER), A., ii, 150.

**Chlorine** :—

**Chlorides**, estimation of, in commercial bromides (RABE), A., ii, 765.

estimation of, in presence of bromides (HERTING), A., ii, 435.

estimation of, in presence of chlorates and perchlorates (MARQUEYROL), A., ii, 652.

**Chlorates**, theory of the formation of (MÜLLER and KOPPE), A., ii, 797.

estimation of, in presence of chlorides and perchlorates (MARQUEYROL), A., ii, 652.

**Perchlorates**, estimation of, in presence of chlorides and chlorates (MARQUEYROL), A., ii, 652.

**Hypochlorous acid**, action of, on ethylene hydrocarbons (UMNOVA), A., i, 249.

**Chlorine**, estimation of, in presence of hydrochloric acid (BOLSER and GLATTFELD), A., ii, 435.

estimation of, in potable water (STUART), A., ii, 926.

estimation of, in serum (RONA), A., ii, 126.

estimation of, in rain water (WITUYNJ), A., ii, 432.

**Chlorocarbonic acid**, ethyl ester, action of magnesium and aliphatic halogen derivatives on (MATSCHUREVITSCH), A., i, 257.

action of, on sodium derivatives of ketones (HALLER and BAUER), A., i, 299.

**Chlorocodon**, occurrence of *p*-methoxy-salicylaldehyde in a species of (GOULDING and PELLY), P., 235.

**Chloro-ethers** (ODDO and CUSMANO), A., i, 942, 943.

**Chloroform**, action of, on blood-vessels (CAMPBELL), A., ii, 738.

influence of, on phagocytosis (HAMBURGER, DE HAAN, and BUBANOVIC), A., ii, 504.

effect of, on protein metabolism of the dog (LINDSAY), A., ii, 303.

reflex action under (SHERRINGTON and SOWTON), A., ii, 753.

**Chloroimino-ketones**, stereoisomeric (PETERSON), A., i, 879.

**Chloromorphides**, physiological action of (HARNACK and HILDEBRANDT), A., ii, 516.

**Chlorophyll** (WILLSTÄTTER and OPPÉ), A., i, 140; (WILLSTÄTTER and STOLL), A., i, 141, 391; (WILLSTÄTTER, MAYER, and HÜNI), A., i, 144; (WILLSTÄTTER and ISLER), A., i, 392; (WILLSTÄTTER and HUG), A., i, 393; (WILLSTÄTTER and UTZINGER), A., i, 659.

**Chlorophyll**, formation of, in plants (MONTEVERDE and LUBIMENKO), A., ii, 424.  
 action of light on (DANGEARD), A., ii, 86.  
 action of ultra-violet light on solutions of (BIERRY and LARGUIER DES BANCELS), A., i, 735.  
 crystalline (TSVETT), A., i, 74.

**alloChlorophyll**, chemical nature of (MARCHLEWSKI and MARSZALEK), A., i, 735.

**Chlorophyll group** (MARCHLEWSKI and ROBEL), A., i, 552, 735; (MARCHLEWSKI, MARSZALEK, and LEYKO), A., i, 898.

**Chlorophyllan** (TSVETT), A., i, 395.

**Chlorophyllans** (MARCHLEWSKI), A., i, 553.

**Chlorophyllase** (WILLSTÄTTER and STOLL), A., i, 142.

**Chlorophyllide** (WILLSTÄTTER and STOLL), A., i, 143.

**isoChlorophyllin** (WILLSTÄTTER and UTZINGER), A., i, 661.

**Chlorophyllins**, solubility and isolation of (TSVETT), A., i, 553.

**Chlorospodiosite** (CAMERON and Mc CAUGHEY), A., ii, 734.

**Cholagogues**, aromatic compounds as (PETROWA), A., ii, 1010.

**Cholesterol**, from the skull of an Egyptian mummy (ABDERHALDEN), A., ii, 1006.  
 in petroleum (Koss), A., i, 761.  
 isolation of, from brain (SMITH and MAIR), A., i, 44.  
 and its esters, resorption of (KLEIN and MAGNUS-LEVY), A., ii, 57.  
 compound of, with dioscine (YAGI), A., i, 140.  
 compounds of, with fatty acids (PARTINGTON), T., 313; P., 14.  
 antagonism of, to the glucosidic heart poisons (KARAÚLOW), A., ii, 517.  
 effect of glycerol on the clearing point of (SMITH and MAIR), A., i, 44.  
 inhibition of the irritating action of oleic acid by (LAMB), A., ii, 52.  
 relations of, and the phytosterols (SALKOWSKI), A., i, 45.  
 production of uric acid from, in the liver (TRAETTA-MOSCA and APOLLONI: TRAETTA-MOSCA and MIZZEN-MACHER), A., ii, 52.  
 fate of, in the animal organism (BROWINSKI), A., ii, 305.  
 pharmacology of acids produced by oxidation of (FLURY), A., ii, 1119.  
 and its derivatives, action of, in the syphilis reaction (BROWNING and CRUICKSHANK), A., ii, 1014, 1118.

**Cholesterol**, iodo-fat derivatives of, behaviour of, in the body (ABDERHALDEN and GRESSEL), A., ii, 1015.  
 estimation of, in tissues (LAPWORTH), A., ii, 305.

**Cholesterol**,  $\alpha$ -, and  $\beta$ -iodo-, propionyl derivatives, and *di*-iodo-, elaidyl derivative (ABDERHALDEN and GRESSEL), A., ii, 1015.

**Cholesterols** in soils (SCHREINER and SHOREY), A., ii, 327.

**Cholesteryl ethers**, preparation of (DIELS and BLUMBERG; STEINKOPF and BLÜMMER), A., i, 971.

**Cholesterylamine** and its salts and derivatives (WINDAUS and ADAMLA), A., i, 961.

**Cholesterylurethane** (WINDAUS and ADAMLA), A., i, 961.

**Cholic acid** (SCHENCK), A., i, 10.  
 cotanine salt of (FREUND), A., i, 561.

**Choline** in ox-brain (KAUFFMANN), A., ii, 1005.  
 action of, on blood-pressure (ABDERHALDEN and MULLER), A., ii, 994.

**Chondrodine** and its salts and derivatives (SCHOLTZ), A., i, 913.

**Chorda tympani**, effect of drugs on the action of the (DALE and LAIDLAW), A., ii, 997.

**Choroid glands**, function of the (KRAMER), A., ii, 1006.

**Chrome iron ore**, estimation of chromium in (NYDEGGER), A., ii, 773.

**Chromic acid**. See under Chromium.

**Chromite**, from the Marjalahti meteorite (BORGSTRÖM), A., ii, 120.

**Chromium**, refraction and absorption of (FRÉEDERICKSZ), A., ii, 349.  
 complex salts of, with amino-acids (TSCHUGAEFF and SERBIN), A., i, 115.  
 basic acetate of (GUSSMANN), A., i, 103.

**Chromium alloys** with iron, resistance of, to acids (MONNARTZ) A., ii, 610.  
 with iron and carbon (ARNOLD and READ), A., ii, 1092.

**Chromium compounds**, effect of, on plants (KOENIG), A., ii, 524.

**Chromium salts** as disinfectants in plague (KOENIG), A., ii, 311.

**Chromium trioxide**, solubility of, in water (KREEMANN, DAIMER, and BENNESCH), A., ii, 898.

**Chromic acid**, salts of, with propionic acid (WEINLAND and HOEHN), A., i, 104.

**Chromous chlorides**, isomeric (KNIGHT and RICH), T., 87.

**Chromyl acetate**, bromide and chloride, preparation of (FRY), A., ii, 610.

**Chromous chlorides** :—

**Chromyl** chloride, action of, on india-rubber (SPENCE and GALLETTY), A., i, 314.

action of carbon on (RODRIGUEZ MOURELO and GARCÍA BANÚS), A., ii, 731.

compound of, with bornylene (HENDERSON and HEILBRON), T., 1891; P., 248.

**Chromic** sulphates, ionisation of (COLSON), A., ii, 1096.

**Chromium**, detection of (KOENIG), A., ii, 337.

detection of, in steel (STANĚK), A., ii, 443.

estimation of, in chrome iron ore (NYDEGGER), A., ii, 778.

estimation of, in steel (HINRICHSEN and DIECKMANN), A., ii, 156; (WDOWISZEWSKI and BOGOLUBOFF), A., ii, 157.

separation of iron, and aluminium (TCHARVIANI and WUNDER), A., ii, 156; (SCHIRM), A., ii, 936.

**Chromium ammine salts** (WERNER), A., i, 951.

**Chromium steel** (PORTEVIN), A., ii, 805.

cementation of (GIOLITI and CARNEVALI), A., ii, 728.

**Chromotelluric acid**, salts of (BERG), A., ii, 611.

**Chromyl** salts. See under Chromium.

**Chrysazine dimethyl ether** (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 469.

**Chrysene**, synthesis of (BESCHKE, WINOGRAD-FINKEL and KÖHRES), A., i, 873.

**Chrysene**, 2:8-dihydroxy-, and its derivatives (BESCHKE, WINOGRAD-FINKEL, and KÖHRES), A., i, 874.

1:2:8-trihydroxy- (BESCHKE and DIEHM), A., i, 890.

**Chrysene carboxylic acid** and its sodium salt (LIEBERMANN and ZSUFFA), A., i, 202.

**Chrysocolla** from Chili (KELLER), A., ii, 1104.

*iso***Chrysofluorene**, identity of, with dihydrobenzanthrene (SCHOLL and SEER), A., i, 626.

**Chrysophanic acid** (FISCHER, FALCO, and GROSS), A., i, 309.

preparation of, and its derivatives (FISCHER and GROSS), A., i, 886.

rhein, and aloemodin, relation between (OESTERLE), A., i, 887.

and its dibenzoyl derivative (TUTIN and CLEWER), T., 955; P., 89.

dimethyl ether, salts of (FISCHER, GROSS, and NEBER), A., i, 887.

**1:2-Chrysophenazine**, 8-hydroxy-, and its derivatives (BESCHKE and DIEHM), A., i, 890.

**1:2-Chrysoquinone**, 8-hydroxy-, and its derivatives (BESCHKE and DIEHM), A., i, 889.

**2:8- or amphi-Chrysoquinone** and its bisulphite compound (BESCHKE and DIEHM), A., i, 889.

**1:2-Chrysoquinone-1-anil**, 8-hydroxy-, and its derivatives (BESCHKE and DIEHM), A., i, 889.

**Chymosin**. See Rennin.

**Cichorium intybus**, colour changes in the blue flowers of (KASTLE and HADEN), A., ii, 1023.

**Cider**, the greasiness of (KAYSER), A., ii, 648, 759.

**Cincholeupone** derivatives, synthesis of (WOHL and MAAG), A., i, 24.

**Cinchomeronic acid**, betaine of (KIRPAL), A., i, 157.

**Cinchona alkaloids** (RABE and MARSCHALL: RABE and MILARCH), A., i, 741; (RABE), A., i, 742.

action of magnesium organic compounds on (ÖDDO), A., i, 433.

**Cinchona bark**, estimation of quinine and alkaloids in (VIGNERON), A., ii, 234.

**Cinchonamine** hydrochloride, action of on frog's nerves (ELLISON), A., ii, 905.

**Cinchonic acid**, synthesis of (KAUFMANN, WIDMER, and ALBERTINI), A., i, 749.

**Cinchonidine**, acetyl, benzoyl and benzenesulphonyl derivatives of (HILDITCH), T., 238.

hydrochloride, double salt of, with antimony pentachloride (THOMSEN), A., i, 484.

*iso***Cinchonidine** and its salts (PANETH), A., i, 561.

**Cinchonine**, partial synthesis of (RABE), A., i, 742.

and its isomerides. absorption spectra of (DOBBIE and LAUDER), T., 1254; P., 148.

action of sulphuric acid on (PANETH), A., i, 560.

acetyl, benzoyl and benzenesulphonyl derivatives of (HILDITCH), T., 238.

hydrochloride, double salt of, with antimony pentachloride (THOMSEN), A., i, 484.

benzaldehyde sulphite (MAYER), A., i, 224.

**Cinchotoxine**, *N*-bromo- (RABE), A., i, 742.

**Cineole**, fate of, in the organism (HAMÄLAINEN), A., ii, 137.

**Cinnamaldehyde-p-methoxyphenylhydrazone** (PADOA and SANTI), A., i, 1029.

**Cinnamic acid**, optically active, from storax-cinnamic acid (ERLENMEYER and HILGENDORFF), A., i, 781, 782, 783; (ERLENMEYER), A., i, 782. isomerides of (ERLENMEYER), A., i, 721. and its esters, complex compounds of mercury with (SCHRAUTH, SCHOELLER, and STRUENSEE), A., i, 595. ethylene and glycerol esters of (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 858. *d*-methylhexylcarbonyl ester of (HILDITCH), T., 222; P., 6. *dL*-, *α*- and *L*-*β*-octyl esters of (PICKARD and KENYON), T., 67.

**Cinnamic acid**, *o*-amino-, acetyl derivative, *m*-amino-, acetate, and *o*- and *p*-hydroxy-, esters of (POSNER), A., i, 53. *α*-amino-3:4-dihydroxy-, benzoyl derivative and its lactimide (FUNK), T., 555. *β*-chloro-, and its derivatives (JAMES), T., 1620; P., 216. 3:4-dihydroxy-, methyl ester (POWER and ROGERSON), P., 304. *o*-iodo-, methyl ester (MAYER), A., i, 870. *α*-thio- (HINSBERG), A., ii, 874. *allo***Cinnamic acid**, action of sunlight on (DE JONG), A., i, 639. *allo***Cinnamic acid**, *o*-chloro-, and its derivatives (STOERMER, FRIDERICI, BRAUTIGAM, and NECKEL), A., i, 297. *β*-chloro-, and its derivatives (JAMES), T., 1620; P., 216. *cis***Cinnamic acid**, transformations of (KRUYT), A., i, 975. **Cinnamic acids**, substituted, preparation of (POSNER), A., i, 52. *allo***Cinnamic acids**, isomerism of (MEYER), A., i, 975. *allo*- and *iso***Cinnamic acids**, refraction of light by (STOBBE and REUSS), A., i, 859. transformations of (STOBBE), A., i, 859. **Cinnamic *o*-cinnamoyloxybenzoic anhydride** (EINHORN and SEUFFERT), A., i, 54. **Cinnamoyl**, *α*-bromo-, bromide (STAUDINGER and OTT), A., i, 639. **Cinnamoyl-*p*-aminoacetophenone** (REMFRY), T., 625; P., 72. **Cinnamoylcaramic acid**, ethyl ester, preparation of (REMFRY), T., 624. **2-Cinnamoyliminobenzimidazole** (PIERRON), A., i, 166. **Cinnamoylhydrazide** and its derivatives (MUCKERMANN), A., i, 682. **2-Cinnamoyl-*α*-naphthol**, 4-nitro-, and 2-*m*-nitro- (TORREY and CARDARELLI), A., i, 68.

**o-Cinnamoyloxybenzoic anhydride** (EINHORN and SEUFFERT), A., i, 54. **Cinnamoylphenylguanidine** (PIERRON), A., i, 166. **Cinnamoylphenylthiosemicarbazide** (MUCKERMANN), A., i, 682. **Cinnamoylsemicarbazide** (MUCKERMANN), A., i, 682. **Cinnamylidethylallylammmonium iodide** and platinichloride (EMDE and SCHELLBACH), A., i, 282. **Cinnamylidethylamine** and its platinichloride (EMDE and SCHELLBACH), A., i, 282. **Cinnamylidene esters**, reaction of, with magnesium organic compounds (REYNOLDS), A., i, 860. **Cinnamylideneacetic acid**, addition of hydrogen bromide to (RIIBER), A., i, 979. **isopropyl ester** (AUWERS and EISENLOHR), A., ii, 784. *α*-cyano-, esters, action of light on (REIMER), A., i, 447. *allo***Cinnamylideneacetic acid**, oxidation of (RIIBER), A., i, 860. methyl ester (REYNOLDS), A., i, 861. **Cinnamylideneacetophenone**, action of light on (STOBBE and RÜCKER), A., i, 385. *iso***Cinnamylideneacetophenone** (STOBBE and RÜCKER), A., i, 385. **4-Cinnamylideneamino-2-acetyl-*α*-naphthol** (TORREY and CARDARELLI), A., i, 68. **3-Cinnamylideneamino-2-methyl-4-quinazolone** (BOGERT, BELL, and AMEND), A., i, 163. **Cinnamylidenemalonic acid**, addition of hydrogen bromide to (RIIBER), A., i, 979. amyl ester (AUWERS and EISENLOHR), A., ii, 784. **Citraconic acid**, ethyl ester, condensation of, with ethyl sodiomalonate (HOPE), P., 281. **enol-Citral acetate** (SEMMLER and SCHLOSSBERGER), A., i, 475. **Citric acid**, fermentation of, in milk (BOSWORTH and PRUCHA), A., ii, 318. oxidation of, by animal tissues (BATTELLI and STERN), A., ii, 412. ammonium salt, preparation of a neutral solution of (HALL and BELL), A., ii, 657. compounds of, with alkaline earths (QUARTAROLI), A., ii, 489. basic barium salts of (QUARTAROLI), A., i, 176. estimation of, in milk (DESMOULIÈRE), A., ii, 548.

**Citronella grass oil** (SCHIMMEL & Co.), A., i, 476.

**Citronellal oxide and its derivatives** (PRILESCHAEFF), A., i, 604.

**Citronellalnitrite**, derivatives of (WALLACH and HENJES), A., i, 313.

**Citrophosphate** solutions (PRATOLONGO), A., ii, 865.

**Cladistic acid** (HESSE), A., i, 209.

**Clavicepsin** (MARINO-ZUCO and PASQUERO), A., i, 1003.

**Climateology**, physiological (OSBORNE), A., ii, 124.

**Clupeine**, nitro- (KOSSEL and KENNaway), A., i, 667.

**Coal**, constituents of (PICTET and RAMSEYER), A., i, 851.

volatile constituents of (BURGESS and WHEELER), T., 649; P., 70; (PORTER and OVITZ), A., ii, 201.

estimation of total sulphur in (WARUNIS). A., ii, 436.

**Coal gas**, radiation in explosions of air and (DAVID), A., ii, 1046.

estimation of sulphur in (BLAIR), A., ii, 534.

**Coal tar**, pitch from, and its use in briquetting coal dust (BERNUS), A., i, 271.

insecticides from, action on green plants (MIRANDE), A., ii, 223.

**Cobalt**, resolution of the spectral lines of, in the magnetic field (RYBÁR), A., ii, 1042.

electrochemistry of (SCHILD BACH), A., ii, 13.

atom, the asymmetric (WERNER), A., i, 838.

complex compounds of, with glyoximes (TSCHUGAEFF), A., i, 261.

**Cobalt salts**, absorption of light by (HOUSTOUN : HOUSTOUN and BROWN), A., ii, 785; (HOUSTOUN and ANDERSON), A., ii, 786.

magnetisation of (WEISS and FOËX), A., ii, 183.

**Cobalt hydroxo-nitrates**, silver, strontium and zinc salts (ROSENHEIM and GARFUNKEL), A., i, 619.

**Cobaltinitrites**, complex (ROSENHEIM and GARFUNKEL), A., i, 619.

**Cobaltamine salts** (WERNER), A., i, 838.

nitroso-, sensitiveness of, to light (BURGER), P., 160.

reactions of stereoisomeric (WERNER), A., i, 424; (WERNER, KING, and SCHOLZE), A., i, 613.

**Luteocobaltic** chloride, reaction of, with phosphates (SESÉ), A., ii, 537.

**Aquo- and chloro-pentamminocobalt** chlorides, equilibrium between (PERS), A., ii, 1094.

**$\alpha$ - and  $\beta$ -Cobalt** tetra-aquofluorides (COSTACHESCU), A., ii, 730.

**Cobalt organic compounds** :—

acetylacetonato-nitrites (ROSENHEIM and GARFUNKEL), A., i, 619.

guanidinium hydroxo-nitrites (ROSENHEIM and GARFUNKEL), A., i, 619.

**Cobaltiamminochloromethylglyoxime** (TSCHUGAEFF and TISCHTSCHENKO), A., i, 262.

**Cobaltidiamminomethylglyoxime** and its salts (TSCHUGAEFF and TISCHTSCHENKO), A., i, 262.

**Cobaltidihydroxylaminodimethylglyoxime**, chloride and iodide of (TSCHUGAEFF and KIRÉEFF), A., i, 262.

**Cobalt**, distinction between nickel and (WEIL), A., ii, 158.

and nickel, borax bead tests for (CURTMAN and ROTHBERG), A., ii, 336.

precipitation of, as carbonate (SCHIRM), A., ii, 1138.

estimation of, electrolytically (BENNER and Ross), A., ii, 443.

copper and nickel, estimation of (PEDERSON), A., ii, 771; (DEDE), A., ii, 1035.

**Cobaltite**, constitution of (BEUTELL), A., ii, 1094.

**Cobra poison**. See Poison.

**Coca leaves**, analysis of (BIERLING, PAPE, and VIEHÖVER), A., ii, 344; (DE JONG), A., ii, 552.

**Cocaine**, volatility of (FULLER), A., i, 317.

haemolysis (PRIBRAM), A., ii, 125.

inhibition of the toxic properties of, by peripheral nerves (WADA), A., ii, 315.

hydrochloride, double salt of, with antimony pentachloride (THOMSEN), A., i, 484.

benzaldehyde sulphite (MAYER), A., i, 224.

permanganate test for (SEITER), A., ii, 671.

and its substitutes, detection of (HANKIN), A., ii, 162; (SEITER and ENGER), A., ii, 670.

estimation of, by precipitation (NYMANN and BJÖRKSTEN), A., ii, 235.

**$\beta$ - and  $\gamma$ -Coccinio acids**, synthesis of (MELDRUM), T., 1712; P., 216.

**Cochenillic acid**, synthesis of derivatives of (MELDRUM), T., 1712; P., 216.

**Cochineal**, fatty acids from (HUERRE), A., i, 766.

**Codine** hydrochloride, double salt of, with antimony pentachloride (THOMSEN), A., i, 484.

**Codeine oxide** (FREUND and SPEYER), A., i, 909.  
 and its salts and derivatives (FREUND and SPEYER), A., i, 77 ; (MOSSLER and TSCHEBULL), A., i, 223.

**Codeine**, amino-, hydroxy-, and  $\alpha$ -nitro-, and their salts (FREUND and SPEYER), A., i, 910.  
 2-amino-, and its hydrochloride and 2-hydroxy- (WIELAND and KAPPELMEIER), A., i, 745.  
 hydroxy- (*neopine*), and its salts (DOBIE and LAUDER), T., 34.

**Codeine**, estimation of, in opium (ANDREWS), A., ii, 1144.

**Codeine methyl ether** and its salts (KNORR and ROTH), A., i, 1014.

**Codeineoxidesulphonic acid** and its salts and derivatives and nitro- (FREUND and SPEYER), A., i, 909.

**Codeinesulphonic acid** and its isomerides and derivatives (FREUND and SPEYER), A., i, 910.

**Cod liver oil**, analysis of, by means of miscibility curves (LOUISE), A., ii, 548.

**Coffee** (GORTER), A., i, 221.

**Coffee beans**, oil and wax of (MEYER and ECKERT), A., i, 106.

**Cohesion pressure** (TRAUBE), A., ii, 469.

**Coke**, estimation of cyanogen compounds in the gases from (LECOQ), A., ii, 161.

**Colchicine** (WINDAUS), A., i, 904.

**Colchide** and its picrate and acetyl and benzoyl derivatives (WINDAUS), A., i, 905.

**Colchicin anhydride** and its derivatives (WINDAUS), A., i, 905.

**Coleoptera**, digestive enzymes from (BOOUNOUR), A., ii, 214.

**Collidinedicarboxylic acid**, ethyl ester, salts of (CIAMICIAN and SILBER), A., i, 647.

**Colloidal compounds**, saturation capacity of (SPRING), A., ii, 102.  
 solutions (GUARESCHI), A., ii, 261.  
 validity of the Boyle-Gay-Lussac laws for (SVEDBERG and INOUYE), A., ii, 703.  
 colour and dispersity of (OSTWALD), A., ii, 868.  
 ultramicroscopic observation of the coagulation of (SVEDBERG and INOUYE), A., ii, 1077.  
 of metals (LORENZ), A., ii, 379.  
 transition between true and (v. WEIMARN), A., ii, 102.  
 viscosity of (WOUDSTRA), A., ii, 190 ; (HERZOG), A., ii, 373.

**Colloidal solutions**, capillary analysis of (SAHLBOM), A., ii, 100 ; (FICHTER and SAHLBOM), A., ii, 259.  
 state, the (MALFITANO), A., ii, 102.  
 substances, permeability of (BARY), A., ii, 702.  
 systems, properties of (BAYLISS), A., ii, 866, 867.  
 application of the phase rule to (JONKER), A., ii, 103.

**solid**, in metallography (BENDICKS), A., ii, 25 ; (LOTTER-MOSER), A., ii, 194.

**Colloids** (DUHEM), A., ii, 377.  
 chemistry of (JORDIS), A., ii, 377.  
 electrolytic (HARDY), A., ii, 378.  
 action of ions on (MINES), A., ii, 130.  
 simultaneous coagulation of two (TIEBACKX), A., ii, 868.  
 organic (LEVITES), A., i, 247.  
 synthesis of (WEDEKIND), A., i, 684.  
 positive, electrical precipitation of (FICHTER), A., ii, 100.  
 changes in physical condition of (CHIARI), A., i, 590.  
 osmotic pressure of (DUCLAUX and WOLLMAN), A., ii, 588 ; (BILTZ and PFENNING), A., ii, 702.  
 simultaneous coagulation of (TIEBACKX), A., ii, 378, 591.  
 ultra-microscopic investigations of (WIEGNER), A., ii, 591.  
 mode of dissolution of (BARY), A., ii, 590.  
 in relation to agriculture (RAMANN), A., ii, 529.  
 in urine (LICHTWITZ), A., ii, 632.  
 diffusion of electrolytes in (ROLLA), A., ii, 969.  
 estimation of, in arable soils (KÖNIG, HASENBÄUMER, and HASSSLER), A., ii, 1033.

**Colophonic acids** (KÖHLER), A., i, 295.

**Coloration** produced by the interaction of aromatic amino- and nitro-compounds (WALTER), A., i, 363.

**Colorimeter**, modified (CAMPBELL and HURLEY), A., ii, 765.

**Colour** of solid substances, influence of  $\alpha$ -,  $\beta$ -, and  $\gamma$ -rays on the (DOELTER and SIRK), A., ii, 171.  
 effect of ions transported by the current on the primary affinity for (SCHWARTZ), A., ii, 306.  
 and constitution (PORAI-KOSCHITZ), A., ii, 3 ; (PAWLEWSKI), A., i, 480.  
 and dilution, relation between (PICARD), A., ii, 561.  
 causes of the formation of, in inorganic compounds (REICHARD), A., ii, 561.

**Colour** sensitiveness, the theory of (WINTHER), A., ii, 239.

**Colours**, development of, in fibres, by light (BAUDISCH), A., ii, 952.

**Colouring-matter**,  $C_{14}H_{15}N_2S_2Cl$ , from oxidation of *p*-aminophenyl methyl sulphide, and its derivatives (ZINCKE and JÖRG), A., i, 285.

$C_{15}H_{18}O_2N_3Cl$ , from phenopyrrolecarboxylic acid (PILOTY, QUITMANN, and EPPINGER), A., i, 92.

$C_{19}H_{16}N_2$ , from 2-methylindole-3-aldehyde, and its salts (KÖNIG), A., i, 809.

$C_{28}H_{23}N_3$ , from 2-methylindole-3-aldehyde (ELLINGER and FLAMAND), A., i, 329.

**Colouring-matters**, adsorption of, by crystals (MARC), A., ii, 193.

dialysis of (BILTZ and PFENNING), A., ii, 375, 702.

action of sulphurous acid and sulphites on (WEIL, DÜRRSCHNABEL, and LANDAUER), A., i, 1006.

elimination of, by the animal organism (SISLEY and PORCHER), A., ii, 515.

use of anthraquinone derivatives as (v. GEORGIEVICS), A., i, 546.

green and yellow, of *Florideæ* (MARCHLEWSKI), A., ii, 1129.

hydroxyazo-, bisulphite compounds of (VOROSCHTOFF), A., i, 819.

natural, in the Philippines (BROOKS), A., i, 553.

natural vegetable, reactions of (CAVAZZA), A., ii, 142.

polyhydroxybenzophenone, relation between chemical constitution and fastness to light of (WATSON and DUTTA), A., i, 305.

from diphenylethylene (LEMOULT), A., i, 399.

from gallic acid (EHRMANN), A., i, 459.

of white grapes (DEZANI), A., ii, 223.

of the indigo group (BINZ and MANDOWSKY), A., i, 497.

from quinoline (KAUFMANN, STRÜBIN, ANASTACHEWITCH, POPPER, and SZNAJDER), A., i, 328.

quinonoid (PICCARD), A., i, 568.

vat, from  $\alpha$ -naphthaquinone (PUMMERER and BRASS), A., i, 654.

from pyranthrone (SCHOLL), A., i, 656.

natural vegetable. See also:—

Azofrin.

Hypericin.

Myricetin.

Thujorhodin.

**Columbium**, estimation of, and tantalum (FOOTE and LANGLEY), A., ii, 71, 72.

**Colza** oil, detection of, in other oils (TORTELLI and FORTINI), A., ii, 549.

**Combustion**, convergent (MEUNIER), A., ii, 205, 384.

**Condenser**, new, for vacuum distillation (GÖDECKER and ROSE), A., ii, 468.

improved rapid (v. DER HEIDE), A., ii, 651.

collection of condensed water from a reflux (DEDE), A., ii, 714.

**Conduction**, electrical. See under Electrochemistry.

**Congo-red**, osmotic pressure and conductivity of aqueous solutions of (DONNAN and HARRIS), T., 1554; P., 209.

**Congress of chemistry** at Karlsruhe in 1860 (v. MEYER), A., ii, 199.

**Coniceine** silicotungstate (JAVILLIER), A., i, 152.

**Conifers** of Australia (BAKER and SMITH), A., i, 477.

injury to, by furnace gases (FEIST), A., ii, 326.

waxes of the (BOUGAULT), A., ii, 223.

**Convallamarin**, detection of (REICHARD), A., ii, 345.

**Convallarin**, detection of (REICHARD), A., ii, 345.

**Convicine**, constitution of (SCHULZE and TRIER), A., i, 155.

**Copper**, arc and spark spectrum of (ARETZ), A., ii, 351.

mobility of the positive ions produced during oxidation of (CAMPETTI), A., ii, 356.

copper oxide electrode. See Electrode under Electrochemistry.

velocity of solution of, in aqueous ammonia (YAMASAKI), A., ii, 383.

solubility of hydrogen in (SIEVERTS), A., ii, 895.

extraction of gas from, heated in a vacuum (GUICHARD), A., ii, 803.

commercial, extraction of oxygen from (GUICHARD), A., ii, 934.

oxidation of, at high temperatures (JORISSEN), A., ii, 41.

convergent combustion by means of (MEUNIER), A., ii, 205.

influence of metallic nitrates on the solution of, in nitric acid (RENNIE and COOKE), T., 1035; P., 42.

colloidal, formation of (RASSENFOSSE), A., ii, 41.

as a fungicide (VERMOREL and DANTONY), A., ii, 647.

compound of, with quinol (THOMPSON), P., 155.

anode. See under Electrochemistry.

**Copper** bells from Mexico and Yucatan, analysis of (FISKE), A., ii, 726.  
 calorimeter. See Calorimeter.  
 voltameter, effect of sucrose on the accuracy of the (DEDE), A., ii, 461.

**Copper alloys**, occluded gas in (GUILLEMIN and DELACHANAL), A., ii, 41.  
 with calcium (BAAR), A., ii, 611.  
 with iron, corrosion of, by salt water (JORISSEN), A., ii, 41.  
 with manganese and tin, magnetic properties of (ROSS and GRAY), A., ii, 183.  
 with silver and gold (JANECKE), A., ii, 1089.

**Copper salts** of organic acids, and their behaviour with alkalis (PICKERING), P., 276.

**Copper** chloride and sulphate, sodium chloride and sulphate and water, equilibrium in the system (SCHREINEMAKERS), A., ii, 592.  
 oxide, action of alkyl iodides on (DENHAM), A., ii, 804.

**Cuprous** bromide and potassium bromide, thermal analysis of mixtures of (DE CESARIS), A., ii, 804.  
 chloride, thermal analysis of mixtures of, with chlorides of univalent metals (SANDONNINI : POMA and GABBI : DE CESARIS), A., ii, 606.  
 iodide, equilibrium of the formation of (FEDOTEEF), A., ii, 42.  
 oxide, solubility of, in aqueous ammonia solutions (DONNAN and THOMAS), T., 1788 ; P., 213.  
 sulphate solution, electromotive force produced by the flow of, through a capillary tube (RIETY), A., ii, 575.  
 potassium sulphate and water (MEERBURG), A., ii, 380.  
 action of sodium hypophosphite on, in aqueous solution (FIRTH and MYERS), T., 1329 ; P., 139.

**Cupric** bromide, dissociation of (JACKSON), T., 1066 ; P., 45.  
 chloride and sulphate, sodium chloride and sulphate and water, the system (SCHREINEMAKERS and DE BAAT), A., ii, 381.  
 potassium carbonates (PICKERING), T., 800 ; P., 55.

**Cuprous** iodide, analysis of (BARDT), A., ii, 1033.  
 oxide, catalytic action of (STRACHAN), A., ii, 606.

**Copper organic compounds** :—  
 Copper acetylide, constitution of (SCHEIBER, RECKLEBEN, and STRAUSS), A., i, 188.

**Copper organic compounds** :—  
 Copper ferrocyanide, coagulation of (PAPPADÀ), A., ii, 971.  
 membranes, permeability of (BARTELL), A., ii, 1072.

**Cupric** glycollates (PICKERING), T., 1347 ; P., 192.  
 mucates (PICKERING), T., 176 ; P., 7.  
 quinates (PICKERING), T., 177 ; P., 7.  
 saccharates (PICKERING), T., 175 ; P., 7.  
 tartrates (PICKERING), T., 169 ; P., 7.

**Cuprous** thiocyanate, compound of, and trimethylamine (LANG), P., 140.

**Copper**, precipitation of, as carbonate (SCHIRM), A., ii, 1138.  
 estimation of (HANUŠ and SOUKUP), A., ii, 441 ; (DUTOIT and v. WEISSE), A., ii, 1137.  
 quantitative estimation of, in commercial sulphate (CAVAZZI), A., ii, 1137.  
 estimation of, electrolytically in preserves (LAKUS), A., ii, 771.  
 estimation of, in pyrites (MAJEWSKI), A., ii, 335 ; (IWANOFF), A., ii, 660.  
 nickel and cobalt, estimation of (FEDERSON), A., ii, 771.

**Copper ores**, estimation of gold and silver in (LOEJVY), A., ii, 338.

**Cork**, formation of (ZEISEL), A., i, 768.

**Cornicularin** (HESSE), A., i, 210.

**Cornus paniculatum**, fruit of (SHEETS), A., ii, 527.

**Corpus luteum**, active lipoid substance secreted by the (BOUIN and ANCEL), A., ii, 129.

**Corycavidine** and its salts and derivatives (GADAMER), A., i, 318.

**Corydalis alkaloids** (GADAMER), A., i, 153, 318, 483, 1011 ; (GADAMER and KUNTZE), A., i, 1012.

**Cotarnine** (FREUND and LEDERER), A., i, 910.  
 action of, on amides, imides or ureides (KNOLL & Co.), A., i, 670.  
 condensation of, with nitro-compounds (HOPE and ROBINSON), T., 2114 ; P., 265.  
 cholate and phthalate (FREUND), A., i, 561.

**Cotarnineacetamide** (KNOLL & Co.), A., i, 670.

**Cotarnine- $\alpha$ -bromo-*isovalerylcarbamides*** (KNOLL & Co.), A., i, 670.

**Cotarninecarbamide** (KNOLL & Co.), A., i, 670.

**Cotarninephthalimide** (KNOLL & Co.), A., i, 670.

**Cotarnineurethane** (KNOLL & Co.), A., i, 670.

**Cotarnyl-de-N-methylhydroxyecotarnine** and its methiodide (FREUND and KUPFER), A., i, 912.

**Cotarnylidene-de-N-methylhydrocotarnine** (FREUND and KUPFER), A., i, 912.

**Cotarnylidene-de-N-methyliodohydrocotarnine** and its hydriodide (FREUND and KUPFER), A., i, 912.

**Cotarnylidenehydrocotarnine** (FREUND and KUPFER), A., i, 912.

**Cotton**, nitrated, dialysis of (DE MOSENTHAL), A., i, 711.

**Cotton wax** (KNECHT and ALLAN), A., ii, 645.

**Cotunnite**, Vesuvian, radioactive equilibrium in (ROSSI), A., ii, 174.

**Coulometer**. See under *Electrochemistry*.

**Coumalic acid**, bromo-, ethyl ester (WISLICENUS and v. WRANGELL), A., i, 521.

**Coumaranone**, derivatives of (MERRIMAN), T., 911; P., 101.

**Coumaranone**, 1-bromo-1-nitro-, and 1-chloro-1-nitro- (STOERMER and BRACHMANN), A., i, 221.

**2-Coumaranone**, condensation products of (FRIES and PFAFFENDORF), A., i, 149.

**Coumaranonecarboxylic acid**, ethyl ester, metallic derivatives and phenylhydrazone of (MERRIMAN), T., 912; P., 101.

**o-Coumaric acid**,  $\alpha$ -cyano-, and its benzoyl derivative (CLARKE and FRANCIS), A., i, 205.

**o-Coumaric acids**, formation of, from coumarins (FRIES and VOLK), A., i, 203.

**Coumarin**, 4-hydroxy- (*benzotetronic acid*) (ANSCHÜTZ and SCHOLL), A., i, 315. nitro-6-amino-, and its acetyl derivative (CLAYTON), P., 245.

**Coumarins**, conversion of, into coumarinic acids and  $\alpha$ -coumaric acids (FRIES and VOLK), A., i, 203.

**Coumarin-3-carboxylic acid**, 4-hydroxy-, methyl ester, and its derivatives (ANSCHÜTZ and SCHOLL), A., i, 315.

**Coumarin-6-diazo-5-oxide** (CLAYTON), P., 246.

**Coumarinic acids**, formation of, from coumarins (FRIES and VOLK), A., i, 203.

**Coumarones**, phenylated, synthesis of (STOERMER), A., i, 664.

**Covellite**, occurrence and synthesis of (ROGERS), A., ii, 900.

**Coyote**, nitrogenous metabolism of the (HUNTER and GIVENS), A., ii, 303. analyses of the urine of the fox, dog and (HAWK), A., ii, 308.

**Crab**, presence of glycine in extract of (BERLIN), A., ii, 516.

**Creatine** in muscle (MENDEL and ROSE), A., ii, 1007. in the urine of women (KRAUSE), A., ii, 1116. excretion in diabetes mellitus (TAYLOR), A., ii, 310. metabolism. See *Metabolism*. estimation of, in pathological urine (WALPOLE), A., ii, 671.

**Creatinine** (SCHMIDT), A., i, 20. preparation of (FOLIN and BLANCK : FOLIN and DENIS), A., i, 20. in hen's eggs (SALKOWSKI), A., ii, 626. excretion in diabetes mellitus (TAYLOR), A., ii, 310. excretion of, under the influence of muscular tonus (PEKELHARING), A., ii, 1115. metabolism. See *Metabolism*. methylation of (KUNZE), A., i, 21. estimation of (TAYLOR), A., ii, 344.

**Cresol**, trinitro-, metallic salts of (KAST), A., i, 853.

**m-Cresol**, 3:6-dibromo-4- and 6-amino-, 2-chloro-6-amino-, 2-chloro-6-nitro-, 2:4:6-trichloro-, and their salts and derivatives (RAIFORD), A., i, 993.

**p-Chloro**, isolation of, from mixtures of cresols (LIEBRECHT), A., i, 629.

**o- and p-chloro**, and their separation from *m*-, and *p*-cresols (RASCHIG), A., i, 537.

**p-Cresol**, 2:5-dibromo-3-nitro-,  $\psi$ -bromide (ZINCKE, FROHNEBERG, and KEMPF), A., i, 440. estimation of, and phenol in urine (SIEGFRIED and ZIMMERMANN), A., ii, 72, 941.

**o-Cresol-5-dimethylsulphinium**, 3-bromo-, salts and their derivatives (ZINCKE and BRUNE), A., i, 198.

**p-Cresolglyconic acid** (NEUBERG and KRETSCHMER), A., i, 875.

**p-Cresol-3-mercaptopan**, 5-bromo-, and its derivatives (ZINCKE and KEMPF), A., i, 287.

**p-Cresol-3-methylsulphone**, 2:5-dibromo- (ZINCKE and KEMPF), A., i, 288.

**p-Cresol-3-methylsulphoxide**, 2:5-dibromo- (ZINCKE and KEMPF), A., i, 288.

**o-Cresol 5-disulphide**, 3-bromo-, and its acetyl derivative (ZINCKE and BRUNE), A., i, 197.

**p-Cresol 3-disulphide**, 5-bromo-, and its dibenzoyl derivative (ZINCKE and KEMPF), A., i, 287.

*o*-Cresol-5-sulphonic acid, 3-bromo-, esters and anilide of (ZINCKE and BRUNE), A., i, 197.

*p*-Cresol-3-sulphonic acid, 5-bromo-, esters and potassium salt of (ZINCKE and KEMPF), A., i, 287.

*o*-Cresol-5-sulphonyl chloride, 3-bromo-, and its acetyl derivative (ZINCKE and BRUNE), A., i, 197.

*p*-Cresol-3-sulphonyl chloride, 5-bromo-, and its acetyl derivative (ZINCKE and KEMPF), A., i, 287.

Critical temperature, photochemical investigation of opalescence near the (KEESOM), A., ii, 787.

Crops, sulphur required by (HART and PETERSON), A., ii, 431.

Crotalotoxin from the American clapper snake (FAUST), A., ii, 316.

Crotalus poison, action of (BANG and OVERTON), A., ii, 913.

Crotonaldehyde, condensation of (SMEDLEY), T., 1627; P., 208.

hydrogenation of (DOURIS), A., i, 949.

derivatives of (WEGSCHEIDER and SPÄTH), A., i, 112.

*α*-bromo-, derivatives of (VIGUIER), A., i, 178.

Crotonic acid, ammonium salt (FALCIOLA), A., i, 175.

Crotonylhydrazide, and its derivatives (MUCKERMANN), A., i, 814.

Crotonylsemicarbazide (MUCKERMANN), A., i, 814.

Crucibles, supports for (v. HEYGEN-DORFF), A., ii, 199.

furnace for (ROBERTS and McDERMOTT), A., ii, 385.

Cryoscopy, thermo-electric method of (DIXON), A., ii, 853.

Crystals, growth of (ARTEMÉEFF), A., ii, 24.

rates of growth and dissolution of (TOTŁOCZKO and TOKARSKI), A., ii, 25.

disperity and hydration of (v. WEIMARN), A., ii, 377.

dehydration of (FIRTH), P., 287.

possible solid solution of water in (RICHARDS), A., ii, 589.

relation of the degree of symmetry of, to their structure (LOEWINSON-LESSING), A., ii, 807.

analogy between swelling and mixing of (KATZ), A., ii, 475.

adsorption of dyes by (MARC), A., ii, 193.

liquid, refractive indices of (GAUBERT), A., ii, 949.

double refraction of (VORLÄNDER and HUTH), A., ii, 165.

Crystals, liquid, molecular structure and optics of (LEHMANN), A., ii, 679.

mimetic, deformation in (FISCHER), A., ii, 882.

mixed, in binary systems, application of the phase rule to (PRINS), A., ii, 196.

Crystalline and amorphous states (DOELTER), A., ii, 376.

liquids, determination of melting points of (STOLTZENBERG), A., ii, 697.

Crystallisation (MARC), A., ii, 193.

velocity of (WAGNER; MARC), A., ii, 265.

dependence of the velocity of, on temperature (TAMMANN), A., ii, 376.

mechanical stimulus to (YOUNG and CROSS), A., ii, 865.

through membranes (WALTON), A., ii, 194.

influence of impurities on (PADOA and MERVINI), A., ii, 474.

in supercooled liquids (YOUNG), A., ii, 261.

in ternary systems (PARRAVANO and SIROVICH), A., ii, 704, 705.

Crystal-ponceau, adsorption of, by charcoal (PELET-JOLIVET and SIEGRIST), A., ii, 374.

Cumaldehyde, 3-nitro-, derivatives of (PIZZUTI), A., i, 62.

$\psi$ -Cumene, 6-chloro- (ORTON and KING), T., 1189.

*dinitro*-, potassium salt (CIUSA), A., i, 932.

Cumeneazo-3-phenylisooxazolone (MEYER), A., i, 341.

$\psi$ -Cumidine, 6-chloro-, and its acetyl derivative (ORTON and KING), T., 1189.

$\omega$ - $\psi$ -Cumidinoacetophenone and its derivatives (BUSCH and HEFELE), A., i, 584.

Cuminaldehyde-*p*-methoxyphenylhydrazone (PADOA and SANTI), A., i, 1029.

Cummingtonite from Mysore (SMEETH), A., ii, 737.

$2$ - $\psi$ -Cumyl-3-ethylisoindolinone, 3-hydroxy- (KUHARA and KOMATSU), A., i, 208.

Cumylitaconic acid and its anhydride (STOBBE and HÄRTEL), A., i, 377.

Cumylparaconic acid (STOBBE and HÄRTEL), A., i, 377.

Cumylisoparaconic acid (STOBBE and HÄRTEL), A., i, 377.

$\psi$ -Cumylphthalamide (KUHARA and KOMATSU), A., i, 207.

$as$ - $\psi$ -Cumylphthalimide (KUHARA and KOMATSU), A., i, 208.

**"Cupferron."** See Phenylhydroxylamine, nitroso-, ammonium salt.

**Cupreine**, absorption spectrum of (DOB-BIE and FOX), P., 325.

new reaction for (DENIGÈS), A., ii, 162.

**Cupric** and **Cuprous** salts. See under Copper.

**Curarine**, preparation of (BOEHM), A., i, 154.

**Curcumic acid** and its calcium salt and *p*-toluidide (RUPE and STEINBACH), A., i, 69, 293.

**Curcumin** and its derivatives (JACKSON and CLARKE), A., i, 218.

**Curcumone**, oxidation products of (RUPE and STEINBACH), A., i, 69.

**Cusparine**, amino-, and nitro-, and their salts and derivatives (TRÖGER and RUNNE), A., i, 482.

**Cuspareine** and its methochloride platinichloride (TRÖGER and RUNNE), A., i, 482.

**Cyanamide**, acylation and alkylation of (DIELS and GOLLMANN), A., i, 955. alkylation of salts of (TRAUBE and ENGELHARDT), A., i, 955.

detection and estimation of, in the presence of other fertilisers (VUAFLART), A., ii, 776.

**Cyanates**. See under Cyanogen.

**apoCyanines** (KAUFMANN, STRÜBIN, ANASTACHEWITCH, POPPER, and SZNAJDER), A., i, 328.

**Cyanogen** bromide, condensation of hydrazoic acid with (OLIVERI-MANDALÀ), A., i, 337.

halides, action of, on phenylhydrazine (PELLIZZARI), A., i, 338.

**Cyanogen compounds** in tobacco smoke (TÓTH), A., ii, 143.

estimation of (TÓTH), A., ii, 1127.

**Hydrocyanic acid**, content and distribution of, in the bamboo (WALTER, KRASNOSELSKAYA, MAKSIMOFF, and MALSCHEWSKY), A., ii, 525.

formation of, in the electric arc (LIPINSKI), A., ii, 849.

formation of, in the electric flame (MOSICKI), A., ii, 1057.

solutions of, in water (ROSENTHALER), A., i, 987.

and benzaldehyde, solutions of, in water (WIRTH), A., i, 875.

loss of, from cherry-laurel water (ASTRUC), A., ii, 921.

detection of, and its stability in the presence of decomposing matter (AUTENRIETH), A., ii, 78.

detection of traces of (LANDER and WALDEN), A., ii, 668.

**Cyanogen compounds**:—

**Cyanides**, estimation of (ROSENTHALER), A., ii, 668.

estimation of, volumetrically, in presence of ferrocyanides (TREADWELL), A., ii, 827.

**Cyanates**, formation of, from nitrites (LIDOFF), A., i, 618.

oxidation of (LIDOFF), A., i, 618.

**Cyanogen**, estimation of compounds of, in coke oven gases (LECOQ), A., ii, 161.

**Cyanuric** bromide, and its derivatives (V. MEYER and NÄBE), A., i, 122.

**Cyanuric** dianisidine bromide (V. MEYER and NÄBE), A., i, 122.

di-*p*-hydroxyanilide bromide (V. MEYER and NÄBE), A., i, 122.

tri-*o*-chloroanilide (trichlorophenyl-melamine) (V. MEYER and NÄBE), A., i, 122.

tri-2:4-dichloroanilide (V. MEYER and NÄBE), A., i, 122.

tri-*o*-nitroanilide (trinitrophenyl-melamine) (V. MEYER and NÄBE), A., i, 122.

**Cyanuric acid**, strontium salt of (BÖESEN-KEN and LANGEZAAL), A., i, 22.

**Cyclic compounds**, absorption spectra of (CRYMBLE, STEWART, WRIGHT, and REA), T., 1262; P., 153.

**Cypral** (ODELL), A., i, 549.

**Cypresene** (ODELL), A., i, 549.

**Cyst**, contents of a dermoid (SALKOWSKI), A., ii, 626.

**Cysteine** in animal organs (ARNOLD), A., ii, 306.

**Cystine**, oxidation of (DENIS), A., i, 616.

**Cytidine** and its salts (LEVENE and JACOBS), A., i, 96.

**Cytosine-5-acetic acid** and its picrate and hydrochloride (JOHNSON, PECK, and AMBLER), A., i, 576.

**Cytosine-5-carboxylic acid**, 2-thio-. See 2-Thiopyrimidine-5-carboxylic acid, 6-amino-.

**D.**

**Dacrydene** and its derivatives (BAKER and SMITH), A., i, 479.

**Damasceninic acid**, synthesis of (EWINS), P., 277.

**Dammar resins**, properties of (COFFIGNIER), A., i, 550.

**Datura**, active constituents of species of, from India (ANDREWS), T., 1871; P., 248.

**Datura metel**, alkaloids in the seeds of (SCHMIDT), A., ii, 143.

**Daturic acid**, methylester and magnesium salt of (MEYER and ECKERT), A., i, 106.

**Deamidisation** (BOSTOCK), A., ii, 1112.

**Decacyclene** (PAODA), A., i, 362.

***a*- and *b*-Decahydro-*β*-naphthol (MAS-CARELLI), A., i, 965.**

**Decamethylene glycol**, diethyl ether (EGOROFF), A., i, 253.

**Decamethylene *α*-*δ*-oxide** (EGOROFF), A., i, 253.

**Decane, *α*-dibromo- (EGOROFF), A., i, 253.**

*tetrabromo-*, *α*-*dinitro*-, and *α*-*di-oximino*- (v. BRAUN and SOBECKI), A., i, 831.

**Decane- $\delta\delta\eta\eta$ -tetracarboxylic acid** and its ethyl ester (REMFYR), T., 623.

**Decylene oxide**, glycol from, and its diacetyl derivative (PRILESCHAEFF), A., i, 255.

**Dedimethoxynarceine** and its salts (HOPE and ROBINSON), T., 1168.

**Dehydracetic acid**, constitution of (HALE), A., i, 721.

**Dehydration** by means of ether (STANĚK), A., ii, 269.

**Dehydrobulbocapnine methyl ether**, salts of (GADAMER and KUNTZE), A., i, 1012.

**Dehydrocampheyllic acid** (*tricyclic acid*), constitution of (KOMPPA), A., i, 642.

**Dehydrogenation** by catalysis (ZELINSKY), A., i, 958.

**Dehydroindigotin**, action of, with acids and alkalis (KALB), A., i, 680.

**Dehydro-*β*-naphthol sulphide** and its phenylhydrazone (HILDITCH and SMILES), T., 981.

**De-*N*-methylbishydrocotarnine** and its salts and derivatives (FREUND and KUPFER), A., i, 911.

**De-*N*-methylisobishydrocotarnine** and its salts (FREUND and KUPFER), A., i, 911.

**Denitrification** in the vegetable kingdom (MAZÉ), A., ii, 518, 642.

formation of oxides of nitrogen during (SUZUKI), A., ii, 916; (LEBEDEFF), A., ii, 917.

**Density**, relation between, refractivity, and magnetic rotation of solutions (SCHWERS), A., ii, 92.

and chemical constitution (EARL), A., ii, 17.

of gases, determination of (JAQUEROD and TOURPAÍAN), A., ii, 189.

of homogeneous solids, determination of, by the "floating" method (ANDREAE), A., ii, 469.

of liquids, determination of the (HARTLEY and BARRETT), T., 1072; P., 100.

**Deoxycholic acid**, occurrence of, in gall stones (KÜSTER), A., ii, 57.

**Deoxy-*p*-toluoin, dibromo-** (CURTIUS and KASTNER), A., i, 325.

**Depressimeter**, automatic stirrer for the (REICHER), A., ii, 93.

**Derrin** (LENZ), A., ii, 646.

**Derris**, constituents of species of (LENZ), A., ii, 645.

**Destrictasic acid** (HESSE), A., i, 209.

**Dextrin**, action of acids and hydrazids on (OECHSNER DE CONINCK and RAYNAUD), A., i, 423.

action of hydrazids on (OECHSNER DE CONINCK and RAYNAUD), A., i, 607.

action of oxalic, lactic, malonic, and tartaric acids on (OECHSNER DE CONINCK and RAYNAUD), A., i, 770, 771.

reactions of (OECHSNER DE CONINCK), A., i, 181.

**Dextrins**, formation of, from starch paste by bacilli (SCHARDINGER), A., i, 181.

**Dextrose**, production of, from the digestion of cellulose (LUSK), A., ii, 311.

in eggs (DIAMARE), A., ii, 129.

in hens' eggs (SALKOWSKI), A., ii, 626.

mutarotation and electrical conductivity of (RABE and ROY), A., i, 14.

influence of sodium and potassium hydroxides on the optical behaviour of, in solution (PROFILO), A., i, 769.

densities of solutions of (LING, EYNON, and LANE), A., i, 354.

proportion of, to laevulose in preserved fruits (FAVREL and GARNIER), A., ii, 1036.

decomposition of, by dilute sulphuric acid (Ost and BRODTKORB), A., i, 951.

instability of, at the temperature and alkalinity of the body (HENDERSON), A., i, 769.

destruction of, by light (MAYER), A., i, 423; (JOLLES), A., i, 524.

diffusion of, in presence of sucrose (RYWOSCH), A., ii, 818.

action of barium hydroxide on (UPSON), A., i, 423.

permeability of blood corpuscles to (RONA and DÖBLIN), A., ii, 302.

selective power of vegetable cells for (LINDET), A., ii, 422.

detection of, by Nylander's test (GOLDSOBEL and SONNENBERG), A., ii, 339.

estimation of, colorimetrically, in urine (AUTENRIETH and TESDORFF), A., ii, 159.

**β-Dextrose**, separation of (BEHREND), A., i, 14.

**Dextrosephenylhydrazones** and their derivatives (BEHREND and REINBERG), A., i, 83.

**Diabetes** (*glycosuria*), experimental (MACLEOD and PEARCE), A., ii, 219, 1009; (FRANK and ISAAC), A., ii, 310.

studies in (EDIE, MOORE, and ROAF), A., ii, 311.

production of, by adrenaline in thyroidectomy (UNDERHILL), A., ii, 137.

produced by adrenaline, and its hindrance by urethane narcosis (UNDERHILL), A., ii, 312.

and acapnia (HENDERSON and UNDERHILL), A., ii, 813.

after injection of sucrose (LE GOFF), A., ii, 752.

metabolism in (MEDIGRECEANU and KRISTELLER), A., ii, 417.

and carbohydrate metabolism (PAVY and GODDEN: UNDERHILL and FINE), A., ii, 1001.

degradation of fatty acids in (BAER and BLUM), A., ii, 512.

creatinine and creatinine excretion in (TAYLOR), A., ii, 310.

**Pancreatic diabetes** in cold-blooded animals (DIAMARE), A., ii, 1117.

**Phloridzin diabetes** (GRUBE), A., ii, 420.

protein metabolism in (WOLF and ÖSTERBERG), A., ii, 512.

**Renal diabetes** (POLLAK), A., ii, 417.

$\alpha\beta$ -Diacetoacetin (ALPERN and WEIZMANN), T., 85.

**Diacetone alcohol**, preparation of (HOFFMAN), A., i, 415.

**Diacetophenone**, *di-m-* and *p*-hydroxy-compounds of, with tin tetrachloride (PFEIFFER, FRIEDMANN, GOLDBERG, PROS, and SCHWARZKOPF), A., i, 791.

2:4- and 2:5-Diacetoxyanisole (MOORE), T., 1045; P., 119.

$\gamma\delta$ -Diacetoxypentane,  $\alpha$ -bromo- (PARIS-ELLE), A., i, 941.

4:4'-Diacetoxyl-3:3'-dimethylthiolydrobenzoin, 2:5:2':5'-tetrabromo-, diacetate (ZINCKE, FROHNEBERG, and KEMPF), A., i, 441.

4:4'-Diacetoxyl-3:3'-ditolyl, 5:5'-di-bromo- (MOIR), P., 227.

$\alpha$ -Diacetoxymercurianilinobutyric acid, ethyl ester (SCHOELLER, SCHRAUTH, and GOLDACKER), A., i, 700.

$\alpha$ -Diacetoxymercurianilinopropionic acid, ethyl ester (SCHOELLER, SCHRAUTH, and GOLDACKER), A., i, 700.

$\alpha$ -Diacetoxymercurianilino*iso*valeric acid, ethyl ester (SCHOELLER, SCHRAUTH, and GOLDACKER), A., i, 700.

**4'-Diacetoxy- $\beta$ -phenylcoumarin** (BARGELINI and LEONARDI), A., i, 902.

**Diacetoxysuccinic acid**. See Diacetyl-tartaric acid.

9:10-Diacetylanthraquinol-1:2-dihydrophenazine (ULLMANN and FODOR), A., i, 467.

**Diacetylbenzoylosazone** (AUWERS, DANNEHL, and BOENNECKE), A., i, 171.

7:13-Diacetyl-5:13-dihydroquindoline (FICHTER and ROHNER), A., i, 86.

**Diacetylmorphine**, dichloro- (WIELAND and KAPPELMAYER), A., i, 746.

**Diacetylloxalic acid**, ethyl ester, phenylhydrazone and methylhydrazone of (DIELS and KOLLISCH), A., i, 230.

9:10-Diacetylphenanthrene and its derivatives (WILLGERODT and ALBERT), A., i, 883.

**Diacetylphenylmethylhydrazone** (DIELS and KOLLISCH), A., i, 230.

*O-N*-Diacetylsalicylamide (TITHERLEY and HICKS), T., 869; P., 102.

**Diacetyltauric acid** (*diacetoxysuccinic acid*), conductivity and dissociation of (DEAKIN and RIVETT), P., 316.

**Dialdan**, diacetyl derivative of (WEGSCHEIDER and SPATH), A., i, 113.

2:2'-Dialdehydodiphenyl and its phenylhydrazone (KENNER and TURNER), T., 2112; P., 93, 262.

and its dioxime (MAYER), A., i, 870.

2:5-Dialdehydopyrrole, 3:4-dichloro- (COLACICCHI), A., i, 225.

**Dialkylanilines**, *dinitro-*, action of nitrous acid on (VAN ROMBURGH), A., i, 281.

5:5-Dialkylbarbituric acids, imino-, preparation of (MERCK), A., i, 572.

$\beta\beta$ -Dialkylpropionic acids, preparation of derivatives of (FARBENFABRIKEN VORM. F. BAYER & CO.), A., i, 259.

5:5-Dialkyliminobarbituric acids, preparation of (MERCK), A., i, 1035.

5:5-Dialkylthiobarbituric acids, preparation of (MERCK), A., i, 1032.

**Dialuric acid**, *p*-phenylenedi-imine ester of (RICHTER), A., i, 757.

**Dialurodi-imine** (RICHTER), A., i, 757.

“Dialysé Golaz,” preparation of, from gentian root (BURMANN), A., ii, 528.

**Dialysis** and **Dialysor**. See under Diffusion.

**Diammonium** compounds. See under Ammonium.

**Diamond**, electrical conductivity and behaviour of, at high temperatures (DOELTER), A., ii, 601.

**Di-isoamylcyanamide** (TRAUBE and ENGELHARDT), A., i, 955.

**Di-isoamylpiperazine** (CLARKE), T., 1934.

**Dianhydrodicotarninetrinitromesitylene** (HOPE and ROBINSON), T., 2135.

**Dianhydrodicotarnine-2:4:6-trinitro-m-xylene** (HOPE and ROBINSON), T., 2134.

**1:4-Dianilinoanthraquinone** (ULLMANN and BILLIG), A., i, 490.

**3:6-Dianilino-p-benzoquinone-3-acetic acid** (MÖRNER), A., i, 57.

**Dianilino-p-benzoquinoneanil** (KÜSTER), A., i, 69.

**3:6-Dianilino-9-phenylxanthenyl chloride** (POPE and HOWARD), T., 552.

**$\alpha\delta$ -Dianisylfulgenic acid** (STOBBE and BENARY), A., i, 377.

**$\alpha\delta$ -Dianisylfulgide** (STOBBE and BENARY), A., i, 377.

**Dianisylidene di- and tri-sulphides, di-hydroxides** (BUGGE and BLOCH), A., i, 61.

**3-Dianisyl-2-methyl-4-quinazolone, 4'-amino-, and 4'-amino-7-acetylamino-** (BOGERT, GORTNER, and AMEND), A., i, 581.

**1:1'-Dianthraquinonyl, 2:2'-dihydroxy-** (BENESCH), A., i, 794.

**4:4'-dihydroxy-, and 2:4:2':4'-tetrahydroxy- and sodium salt of the latter** (SCHOLL and SEER), A., i, 454.

**2:2'-Dianthraquinonyl, and diamino-, and dinitro-** (SCHOLL and NEOVIUS), A., i, 453.

**2:2'-Dianthraquinonylcarbamide** (FARBERWERKE VORM. MEISTER, LUCIUS, & BRÜNING), A., i, 655.

**1:1-Dianthraquinonyl-p-phenylene-diamine** (ULLMANN and FODOR), A., i, 467.

**s-Dianthraquinonylthiocarbamide** (BADISCHE ANILIN- & SODA-FABRIK), A., i, 886.

**Daryl ketones**, metallic compounds of (SCHLENK and WEICKEL), A., i, 545.

**Diastase** (BURACZEWSKI, KRAUZE, and KRZEMECKI), A., i, 1052.

action of, on lecithin (LAPIDUS), A., i, 248.

of the liver, action of lipoids on (CENTANNI), A., ii, 54 ; (STARKENSTEIN), A., ii, 747.

estimation of (SCHIROKAUER and WILENKO), A., ii, 675.

**Diastases** (BANG), A., i, 591.

action of ultra-violet light on (AGULHON), A., ii, 243.

influence of serum and lymph on (WOHLGEMUTH), A., ii, 743.

**Diastatic action**, influence of lecithin on (TERROINE), A., ii, 997.

**Diazoacetic acid**, ethyl ester, interaction of, with *p*-xylene (BUCHNER and SCHULZE), A., i, 50.

**Diazoamino-compounds**, preparation of (VAUBEL), A., i, 1049.

**Diazoaminotetrazolic acid**, salts of (HOFMANN and HOCK), A., i, 1049.

**Diazo- $\psi$ -anilopyrine** chloride and its compound with  $\beta$ -naphthol (MICHAELIS and ABRAHAM), A., i, 1038.

**Diazo-compounds**, thermochemical studies of (SVENTOSLAVSKY), A., ii, 967.

aliphatic, constitution of (THIELE), A., i, 845.

**Diazohydrazides** (FISCHER), A., i, 90.

**Diazomethane**, action of, on iso-oxazolones (OLIVERI-MANDALÀ and COPPOLA), A., i, 492.

**Diazonium sulphinates**, preparation of (CLAASZ), A., i, 695.

**Diazotetrazolebenzylideneaminoguanidine** and its sodium salt (HOFMANN and HOCK), A., i, 1048.

**Diazotetrazolephenylhydrazide** and its sodium derivative (HOFMANN and HOCK), A., i, 1048.

**Diazotetrazole-semicarbazide** (HOFMANN and HOCK), A., i, 1048.

**Dibenzaldehyde**, *di-m*-hydroxy-, and *di-o*-, *m*- and *p*-nitro-, compounds of, with tin tetrahalides (PFEIFFER, FRIEDMANN, GOLDBERG, PROS, and SCHWARZKOPF), A., i, 791.

**Dibenzhydrylamine** and its hydrochloride (MAILHE and MURAT), A., i, 535.

**3:6-Dibenzhydrylhydro-1:2:4:5-tetrazine** (STOLLÉ and LAUX), A., i, 509.

**2:5-Dibenzhydryl-1:3:4-oxadiazole**, and *di- $\omega$ -bromo*, and *di- $\omega$ -chloro* (STOLLÉ and LAUX), A., i, 508.

**3:6-Dibenzhydryl-1:2:4:5-tetrazine** (STOLLÉ and LAUX), A., i, 509.

**Dibenzoarsinic acid**, diquinine ester of (OECHSLIN), A., i, 760.

**3:5-Dibenzo- $\Delta^{3:5}$ -cycloheptadiene,1-imino-2-cyano-** (KENNER and TURNER), T., 2110 ; P., 263.

**3:5-Dibenzo- $\Delta^{3:5}$ -cycloheptadiene-2-carboxylic acid**, 1-imino- (KENNER and TURNER), T., 2111 ; P., 263.

**3:5-Dibenzo- $\Delta^{3:5}$ -cycloheptadien-1-one** and its oxime (KENNER and TURNER), T., 2111 ; P., 263.

**Dibenzophenone**, compound of, with tin tetrachloride (PFEIFFER, FRIEDMANN, GOLDBERG, PROS, and SCHWARZKOPF), A., i, 791.

**s-Dibenzoylacetonedicarboxylic acid** and its diethyl ester (HALE), A., i, 722.

**Di- $\omega$ -benzoylaminodibenzamide** (BOGERT, GORTNER, and AMEND), A., i, 582.

**Diphenyldianilinostilbene** and its methiodide (EVEREST and McCOMBIE), T., 1758 ; P., 218.

**Dibenzoyl-*N*-dihydroanthraquinone-azine** (SCHOLL and EDELBACHER), A., i, 756.

**$\beta\zeta$ -Dibenzoyl- $\beta\zeta$ -dimethylheptane** (HALLER and BAUER), A., i, 652.

**3:4:5:6-Dibenzoylenebenzoic acid** and its salts and ethyl ester (MAROTTA), A., i, 980.

**Dibenzoyl- $\beta$ -naphthol** sulphide and sulphoxide (HILDITCH and SMILES), T., 983.

**4:4'-Dibenzoyloxy-3:3-ditoly**, 5:5'-di-bromo- (MOIR), P., 227.

**9:10-Dibenzoylphenanthrene** (WILLGERODT and ALBERT), A., i, 883.

**$\alpha\gamma$ -Dibenzoyl- $\beta$ -phenylbutyric acid, ethyl ester** (DIECKMANN and v. FISCHER), A., i, 452.

**4:6-Dibenzoylisophthalic acid** (PHILIPPI), A., i, 793.

**Dibenzoylpiperide**, compound of, with tin tetrachloride (PFEIFFER, FRIEDMANN, GOLDBERG, PROS, and SCHWARZKOPF), A., i, 792.

**$\beta\beta$ -Dibenzoylpropane** and its oxime (HALLER and BAUER), A., i, 726.

**Dibenzoylrhein** (FISCHER and GROSS), A., i, 886.

**2:5-Dibenzoyltetraphthalic acid** (PHILIPPI), A., i, 793.

**$\omega$ -Dibenzylaminoacetophenone**, phenylhydrazones of (BUSCH and HEFELE), A., i, 584.

**Dibenzylaminosuccinic acid** and its salts (FRANKLAND), T., 1781; P., 206.

**Dibenzylammonium nitrite** (RÄY and DATTA), T., 1477; P., 127.

**Dibenzylbutanetetracarboxylic acid**, ethyl ester (WOLFF), A., i, 690.

**Dibenzylcyanamide** (TRAUBE and ENGELHARDT), A., i, 955.

**$s$ -Dibenzylidemethylethylenediamine** (CLARKE), T., 1935.

**3:4:3:6-Dibenzoylenebenzoic acid** and its silver salt and ethyl ester (MAROTTA), A., i, 981.

**Dibenzylethylcarbinol** (DAVIES and KIPPING), T., 299.

**Dibenzylhomophthalide** (BAUER and WÖLZ), A., i, 872.

**Dibenzylidene *di*- and *tri*-sulphides**, hydroxides (BLOCH, HÖHN, and BUGGE), A., i, 47; (BUGGE and BLOCH), A., i, 60.

**tetralsulphide** (BLOCH, HÖHN, and BUGGE), A., i, 47.

**3:7-Dibenzylideneamino-2-styryl-4-quinazolone** (BOGERT, BELL, and ÅMEND), A., i, 163.

**Dibenzylidenehydrazinoacethydrazide** (CURTIUS and HUSSONG), A., i, 400.

**Dibenzylmethylallylammmonium iodide** (EMDE and SCHELLBACH), A., i, 282.

**Dibenzylmethylamine**, *di-p*-hydroxy- (TIFFENEAU), A., i, 779.

**$\alpha\alpha$ -Dibenzyl- $\beta$ -methylpropane- $\alpha\beta$ -diol** (PARRY), T., 1173; P., 142.

**Dibenzylmethysilicoll** (KIPPING and HACKFORD), T., 142; P., 9.

**Dibenzylmethylsilicyl oxide** (KIPPING and HACKFORD), T., 142.

**9:10-Dibenzylphenanthrene** (WILLGERODT and ALBERT), A., i, 883.

**3:5-Dibenzyl-2- $\beta$ -phenylethyl-1:4:6-pyronone** (WEDEKIND, HÄUSSERMANN, WEISSWANGE, and MILLER), A., i, 220.

**$\alpha\beta$ -Dibenzyl- $\alpha$ -phenylhydrazine hydrochloride** (FRANZEN and KRAFT), A., i, 817.

**$\alpha\alpha$ -Dibenzylpropane,  $\alpha$ -bromo-** (DAVIES and KIPPING), T., 300.

**Dibiphenylene-ethylene dichloride** (NORRIS, THOMAS, and BROWN), A., i, 32.

**Di- $p$ -butyrylphenylcarbamide** (KUNCKELL), A., i, 990.

**Dicamphenone**, and its derivatives (CASTELLANA and FERRERO), A., i, 217.

***i*-Dicamphenoneimine** (CASTELLANA and FERRERO), A., i, 217.

**Dicamphor**, derivatives of (ODDO), A., i, 475.

**pernitroso-**, derivatives of (CASTELLANA and FERRERO), A., i, 217.

**Di-*i*-camphor, pernitroso-** (CASTELLANA and FERRERO), A., i, 217.

**Dicamphor- $\beta$ -sulphonic acid**, catechol, resorcinol and quinol esters (HILDITCH), A., i, 893.

**Dicamphor- $\beta$ -sulphonyl disulphide** (HILDITCH), A., i, 892.

**Di- $\alpha$ -carbethoxybutyrylbenzidine** (REMFRY), T., 622.

**3:5-Dicarboxy-4:4-diethyltrimethylene-dicarbonimide**, amide of, and its metallic salts (GHIGLIENO), A., i, 321.

**$\beta$ -Dicarboxylic compounds**, reaction between alkylideneurethanes and (BIANCHI and SCHIFF), A., i, 977.

**Dicentrine**, pharmacology of (IWAKAWA), A., ii, 421.

**Di-2-chloro-1-naphthylideneacetone** (SACHS and BRIGL), A., i, 720.

**Dicinnamoylcarbamide** (REMFRY), T., 623.

**Dicinnamoylhdyrazide** (MUCKERMANN), A., i, 682.

**Dicinnamoylpiperide**, compound of, with tin tetrachloride (PFEIFFER, FRIEDMANN, GOLDBERG, PROS, and SCHWARZKOPF), A., i, 792.

**Dicinnamyldiethylammonium chloride** (EMDE and SCHELLBACH), A., i, 282.

**Dicinnamylidene di- and tri-sulphides, hydroxides** (BUGGE and BLOCH), A., i, 61.

**Di-*o*-coumaric acid** (FISCHER, FREUDENBERG, and HOESCH), A., i, 875.

**1:2'-Dicoumarone, 2:1'-dihydroxy-, derivatives of** (FRIES and PFAFFENDORF), A., i, 150.

**$\alpha\delta$ -Dicumylbutane- $\beta\gamma$ -dicarboxylic acid** (STOBBE and HÄRTEL), A., i, 377.

**$\alpha\delta$ -Dicumylfulgenic acid** (STOBBE and HÄRTEL), A., i, 377.

**$\alpha\delta$ -Dicumylisofulgenic acid** (STOBBE and HÄRTEL), A., i, 377.

**$\alpha\delta$ -Dicumylfulgide** (STOBBE and HÄRTEL), A., i, 377.

**$\alpha\delta$ -Dicumylisofulgide** (STOBBE and HÄRTEL), A., i, 377.

**Di- $\psi$ -cumylphthalid-imide** (KUHARA and KOMATSU), A., i, 208.

**Didecyl ketone and its oxime** (PICKARD and KENYON), T., 57.

**Di-*p*-dimethylaminobenzaldehyde**, compounds of, with tin tetra-bromide and -chloride (PFEIFFER, FRIEDMANN, (GOLDBERG, PROS, and SCHWARZKOPF), A., i, 791.

***p*-Didiphenylamine and its derivatives** (WIELAND and SÜSSER), A., i, 570. *dibromo-*, and *o*-chloro- (WIELAND and SÜSSER), A., i, 571.

**Didiphenyldihydrophenazine** and its hydrochloride (WIELAND and SÜSSER), A., i, 571.

**Di-4-diphenylmethane,  $\omega$ -bromo-** (SCHLENK, RENNING, and RACKY), A., i, 596.

**2:5-Didiphenylmethylenedihydro-1:3:4-oxadiazole** (STOLLÉ and LAUX), A., i, 508.

**Dielectric cohesion and constants.** See under Electrochemistry.

**Dierilla lutea**, fraxin in (CHARAUX), A., ii, 1023.

**Diet**, influence of, on metabolism (KOCHEMANN and PETZSCH), A., ii, 506. influence of, on respiration (BENEDICT, EMMES, and RICHE), A., ii, 211. constituents of the ash of (TIGERSTEDT), A., ii, 412. deficient in calcium and phosphorus, effect of, on the secretion of milk (FINGERLING), A., ii, 510.

**$\rho$ -Diethoxybenzil and its osazone** (VORLÄNDER, FRIEDBERG, VAN DER MERVE, ROSENTHAL, HUTH, and v. BODECKER), A., i, 866.

**$\rho$ -Diethoxybenzilic acid** (VORLÄNDER, FRIEDBERG, VAN DER MERVE, ROSENTHAL, HUTH, and v. BODECKER), A., i, 867.

**5:5-Diethoxy- $\alpha$ -dimethyldihydouracil** (5:5-diethoxy-2:6-dioxy-3:4-dimethyl-dihydropyrimidine), 4-hydroxy- (HENKEL), A., i, 160.

**5:5-Diethoxy- $\beta$ -dimethyldihydouracil** (5:5-diethoxy-2:6-dioxy-1:4-dimethyl-dihydropyrimidine), 4-hydroxy- (HENKEL), A., i, 160.

**$\beta\beta$ -Diethoxy- $\alpha\alpha$ -dimethylpropionic acid, ethyl ester** (SHDAÑOVITSCH), A., i, 10.

**4:4'-Diethoxytriphenylacetonitrile** (VORLÄNDER, FRIEDBERG, VAN DER MERVE, ROSENTHAL, HUTH, and v. BODECKER), A., i, 868.

**Diethylacetylbenzamide** (FREUND and FLEISCHER), A., i, 236.

***p*-Diethylaminobenzyl-1-aminoanthraquinone** (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), A., i, 995.

**5-Diethylaminobenzyl-3-methylbenzoic acid**, 2-hydroxy-, and its sodium salt (ANILINFARBEN- & EXTRAKT-FABRIKEN VORM. J. R. GEIGY), A., i, 978.

**5-Diethylaminochlorobenzyl-3-methylbenzoic acid**, 2-hydroxy- (ANILINFARBEN- & EXTRAKT-FABRIKEN VORM. J. R. GEIGY), A., i, 978.

**5-Diethylaminodichlorobenzyl-3-methylbenzoic acid**, 2-hydroxy- (ANILINFARBEN- & EXTRAKT-FABRIKEN VORM. J. R. GEIGY), A., i, 978.

***p*-Diethylaminoethylcarbonatobenzoic acid, methyl ester, and its hydrochloride** (EINHORN and ROTHLAUF), A., i, 705.

**Diethylaminoethylguaiacol** and its hydrobromide (EINHORN and ROTHLAUF), A., i, 704.

**Diethylaminoethylsalicylic acid**, ethyl and methyl esters (EINHORN and ROTHLAUF), A., i, 704.

**Diethylaminoethylthymol** and its citrate (EINHORN and ROTHLAUF), A., i, 704.

**Diethylaminomorphide** and its salts (WIELAND and KAPPELMEIER), A., i, 746.

**4-Dimethylaminophenylazomethine-5-acridine** (PORAI-KOSCHITZ, AUSCHKAP, and AMSLER), A., i, 689.

**2-Diethylamino-2-phenyldihydro-1:3-benzoxazine-4-one**, and its hydrochloride (TITHERLEY and HUGHES), T., 1503.

**$\alpha$ -Diethylamino- $\alpha$ -phenyl- $\Delta\alpha$ -hexen- $\delta$ -one** (ANDRÉ), A., i, 269.

**4-Diethylaminophenylimino-3-phenylisooxazolone** (MEYER), A., i, 687.

**$\alpha$ -Diethylamino- $\alpha$ -phenyl- $\Delta\alpha$ -penten- $\gamma$ -one** (ANDRÉ), A., i, 269.

**Diethylaminostyryl phenyl ketone** (ANDRÉ), A., i, 269.

**Diethylammonium** osmichloride (GUTBIER and MAISCH), A., i, 19.

telluri-bromide and -chloride (GUTBIER, FLURY, and MICHELER), A., i, 182.

**5:5-Diethylbarbituric acid**, 2-imino, and its nitrate (MERCK), A., i, 1035.

**1:3-Diethylcaffolide** (BILTZ and TOPP), A., i, 693.

**3:4-Diethylcarbonatobenzoic acid**, and its acid chloride (FRANCIS and NIERENSTEIN), A., i, 643.

**2-*mp*-Diethylcarbonatobenzoyloxybenzoic acid**, nitro- (FRANCIS and NIERENSTEIN), A., i, 643.

**3:4-Diethylcarbonatophenylglyoxylonitrile** (FRANCIS and NIERENSTEIN), A., i, 644.

**Diethylcreatinine** platinichloride (HENZERLING), A., i, 21.

**Diethylcyanamide** (TRAUBE and ENGELHARDT), A., i, 955.

**2:2'-Diethyl-1:1'-dianthraquinonyl** (SCHOLL, POTTSCHWAUSCHEG, and LENKO), A., i, 1008.

**Diethylquinolensyl** chloride and its derivatives (KAUFMANN, STRÜBIN, ANASTACHEWITCH, POPPER, and SZNAJDER), A., i, 328.

**Diethylquinolyl** chromate and picrate (KAUFMANN, STRÜBIN, ANASTACHEWITCH, POPPER, and SZNAJDER), A., i, 328.

**Diethylenediaminechromic salts**, 1:2-dichloro- (WERNER), A., i, 951.

**Diethylenediaminecobalt**, 1:2- and 1:6-dinitro-, active salts (WERNER), A., i, 841.

**Diethylenesulphidemethylsulphine**, hydroxide, decomposition of, in aqueous solution (GREEN and SUTHERLAND), T., 1174; P., 140.

**Diethylthylenebarbituric acid** (WOLFF), A., i, 690.

**$\gamma$ -Diethylheptan-8-ol** and its phenylurethane (ZEERNER), A., i, 950.

**1:3-Diethylcyclohexadiene** (HENDERSON and BOYD), T., 2164; P., 277.

**1:3-Diethylcyclohexan-5-ol** (HENDERSON and BOYD), T., 2162; P., 277.

**1:3-Diethylcyclohexene** and its dibromide (HENDERSON and BOYD), T., 2163; P., 277.

**1:3-Diethylhydantoin-5-carboxylic acid**, 5-hydroxy-, lactamide of (BILTZ and TOPP), A., i, 693.

**1:3-Diethylhydantoylamide**, 5-hydroxy-, and its derivatives (BILTZ and TOPP), A., i, 693.

**1:3-Diethylhydantoylcarbamide**, 5-hydroxy- (BILTZ and TOPP), A., i, 693.

**Diethylmalonic acid**, ethyl and methyl esters, condensation of, with malonamide (REMFRY), T., 619.

**Diethylmalonylbenzidine** (REMFRY), T., 622.

**Diethylmalonylethylmalonamide** (REMFRY), T., 618.

**Diethylmalonylmalonamide** and its sodium salt (REMFRY), T., 617.

**Diethylmalonylmethylmalonamide** (REMFRY), T., 618.

**1:1-Diethylcyclopentane**, and 2-bromo- (KIJNER and VOZNESENSKY), A., i, 968.

**1:2-Diethyl- $\Delta^1$ -cyclopentene** (KIJNER and AMOSOFF), A., i, 967.

**1:1-Diethyl- $\Delta^2$ -cyclopentene** and its derivatives (KIJNER and VOZNESENSKY), A., i, 968.

**9:10-Diethylphenanthrene**, and  $\alpha$ -dichloro-, and  $\alpha$ -hydroxy- (WILLGERODT and ALBERT), A., i, 883.

**8:16-Diethylpyranthrone** (SCHOLL, POTTSCHWAUSCHEG, and LENKO), A., i, 1008.

**Diethylthiobarbituric acid** (MERCK), A., i, 683.

**4:4-Diethyltrimethylene dicarbonimide** (GHIGLIENO), A., i, 321.

**4:4-Diethyltrimethylene dicarbonimide-3:5-dicarboxylic acid** (GHIGLIENO), A., i, 321.

**4:4'-Diethyltriphenylacetonitrile** (VORLÄNDER, FRIEDBERG, VANDER MERVE, ROSENTHAL, HUTH, and v. BODECKER), A., i, 867.

**7:9-Diethyluric acid 4:5-diglycol**, degradation of (BILTZ and TOPP), A., i, 693.

**Diferulic acid** (FISCHER, FREUDENBERG, and HOESCH), A., i, 875.

**Diffusion experiments** (SCARPA), A., ii, 472.

rate of, and relative size of molecules (SVEDBERG and ANDREEN-SVEDBERG), A., ii, 375.

of dissolved substances (VANZETTI), A., ii, 260.

in solutions of electrolytes (VANZETTI : GIRARD), A., ii, 860.

formation of concentric rings in (LIESEGANG), A., ii, 27.

**Dialysis** of colouring matters (BILTZ and PFENNING), A., ii, 375.

**Dialysor**, a new (ZSIGMONDY and HEYER), A., ii, 260.

**Osmosis** in plants (ARMSTRONG and ARMSTRONG), A., ii, 918.

in plants, action of anaesthetics on (LEPESCHKIN), A., ii, 919.

**Osmotic equilibrium** between two fluid phases (GAY), A., ii, 260, 850.

**Diffusion:**—

**Osmotic phenomena** in non-conducting media (BARY), A., ii, 702.

**Osmotic pressure** (PRUD'HOMME), A., ii, 1071.

measurement of (v. ANTROPOFF), A., ii, 472; (FOUARD), A., ii, 1071.

historical data relating to (ROSENSTIEHL), A., ii, 588.

relation of, to temperature (MORSE, HOLLAND, FRAZER, and MEARS), A., ii, 191; (MORSE, HOLLAND, and CARPENTER), A., ii, 375; (MORSE, HOLLAND, and ZIES; MORSE, HOLLAND, and MYERS), A., ii, 473; (MORSE, HOLLAND, ZIES, MYERS, CLARK, and GILL), A., ii, 701.

of colloids (DUCLAUX and WOLLMAN), A., ii, 588; (BILTZ and PFENNING), A., ii, 702.

**Digallic acid** (FISCHER and FREUDENBERG), A., i, 875.

methyl ester, pentamethyl ether of (MAUTHNER), A., i, 725.

**Digentiacic acid** (FISCHER and FREUDENBERG), A., i, 875.

**Digestion**, influence of loss of blood on (DOBROWOLSKAJA), A., ii, 620.

in ruminants (MARKOFF), A., ii, 810. physiology of (ROSEMANN), A., i, 998, 1110.

and absorption (LONDON and RABINOWITSCH; KRYM), A., ii, 999; (LONDON and DAGÉEFF), A., ii, 1000; (LONDON and GABRILOWITSCH), A., ii, 1001.

defects of (LONDON, DAGÉEFF, STASSOFF, and HOLMBERG), A., ii, 998.

*Digitalis purpurea*, glucosides from the leaves of (KRAFT), A., i, 734. manganese in (BURMANN), A., ii, 1125.

*Digitalis* substances, pharmacology of (SLUYTERMANN), A., ii, 911.

influence of, on blood-pressure (HERNANDO), A., ii, 1017.

**Digitogenic acid**, oxidation products of (KILIANI), A., i, 188.

**Digitonin**, preparation of, and its oxidation products (KILIANI), A., i, 189.

**Digitoxin** and strophanthin, comparative action of, on the heart (RODOLICO), A., ii, 515.

influence of saponin on the toxicity of (POSTOÉEFF), A., ii, 1016.

**Diglycollic acid**, quinine salts of (BOEHRINGER & SÖHNE), A., i, 1011.

*o*-tolylester of (BOEHRINGER & SÖHNE), A., i, 947.

**Diglycollosalicylic acid**, pharmacology of (CHISTONI), A., ii, 314.

**o-Diglycolyloxybenzoic acid** (*diglycolyl-disalicylic acid*) (CHEMISCHE FABRIK v. HEYDEN), A., i, 133.

**Diguanides** (COHN), A., i, 928.

**Diheptadecylcarbinol** and its acetate (EASTERFIELD and TAYLOR), T., 2301; P., 279.

**Dicyclohexanone**, semicarbazone of (HALLER and BAUER), A., i, 300.

$\Delta^{1,1'}$ -**Dicyclohexene** and its dihydrobromide (WALLACH and PAULY), A., i, 474.

**Dicyclohexylhydrazine** and its hydrochloride (KIJNER and BELOFF), A., i, 678.

**Dihydridamine**, dihydroxy-, and its resolution into active compounds, and their salts (POPE and READ), T., 2071; P., 259.

**Dihydroanethole**, action of nitric acid on (THOMS and DRAUZBURG), A., i, 716.

**Dihydroanthracene**, trihydroxy- and its acetyl derivative (TUTIN and CLEWER), T., 960; P., 90.

**Dihydrobenzanthrene** and bromo-, and dibromo- (BALLY, SCHOLL, and LENTZ), A., i, 677. identity of, with isochrysofluorene (SCHOLL and SEER), A., i, 626.

**Dihydrobenzanthrone** (BALLY and SCHOLL), A., i, 676.

$\Delta^{1,3}$ -**Dihydrobenzene**. See  $\Delta^{1,3}$ -cycloHexadiene.

**Dihydroberberine** and its methiodide (GADAMER), A., i, 152.

**Dihydrobixin** and its methyl ether (VAN HASSELT), A., i, 552.

**Dihydroisobixin** (VAN HASSELT), A., i, 552.

**Dihydrobrucine** (SKITA and FRANCK), A., i, 1017.

**Dihydrocafeic acid** (GORTER), A., i, 222.

**Dihydrocampholytic acid**, *l*-hydroxy- (NOYES and KNIGHT), A., i, 111.

*iso***Dihydrocampholytic acid**, amino-, and its derivatives (NOYES and KNIGHT), A., i, 111.

**Dihydrocarvenolide** (WALLACH), A., i, 471.

*neo***Dihydrocarvone**, cyano-, and its derivatives (LAPWORTH and STEELE), T., 1877; P., 240.

**Dihydrocarvonecarboxylamide**,  $\beta$ -cyano- (LAPWORTH and STEELE), T., 1881.

**Dihydrocarvylamine** and its hydrochloride (MORRELL), A., i, 914.

**Dihydrocinnamenylicarbamic acid**, methyl ester (FORSTER and STÖTTER), T., 1339.

**Dihydrocinnamylcarbimide ( $\beta$ -phenyl-ethyl isocyanate)** (FORSTER and STÖTER), T., 1337; P., 206.

**Dihydrocinnamylphenylcarbamide** (FORSTER and STÖTER), T., 1338.

**s-Dihydrocinnamylphenylsemicarbazide** (FORSTER and STÖTER), T., 1338.

**Dihydrocodeine** (SKITA and FRANCK), A., i, 1017.

**Dihydroeucarvone**, derivatives of (RUPE and KERKOVUS), A., i, 848.

**Dihydro- $\alpha$ -fencholenamide** (WALLACH and MEYER), A., i, 471.

**$\alpha$ -Dihydrofencholenic acid** (WALLACH and POHLE), A., i, 471.

**Dihydrofencholenic acid di-hydroxy-** (WALLACH and WIENHAUS), A., i, 312.

**Dihydro- $\alpha$ -fenchonitrile** (WALLACH and MEYER), A., i, 471.

**Dihydrofenchonitrile, dihydroxy-, and its derivatives** (WALLACH and WIENHAUS), A., i, 312.

**Dihydrogyrilon** (GABRIEL), A., i, 229.

**Dihydrohemichlorogenic acid** and its penta-acetate (GORTER), A., i, 222.

**Dihydroindole**, preparation and derivatives of (v. BRAUN and SOBECKI), A., i, 747.

**O-*N*-Dihydro-2:9-indoloanthrone** (SCHOLL and v. WOLODKOWITSCH), A., i, 889.

**Dihydrolaurolactone.** See Campholactone.

**Dihydrolimonene** and its salts (VAVON), A., i, 657.

**Dihydromorphine** and its sulphate and hydrochloride (OLDENBERG), A., i, 668.

**Dihydronorbixin** (VAN HASSELT), A., i, 552.

**Dihydroperillie acid** and its methyl ester and dibromide (SEMMLER and ZAAR), A., i, 218.

**Dihydroperillyl alcohol** (SEMMLER and ZAAR), A., i, 218.

**Dihydroisophorol** (SKITA and PAAL), A., i, 449.

**Dihydropinolol** (WALLACH), A., i, 891.

**Dihydropinolone**, constitution, synthesis and derivatives of (WALLACH), A., i, 891.

**1:6-Dihydro-6-pyrimidone-2- $\alpha$ -thiol- $\beta$ -hydroxyacrylic acid, ethyl ester** (JOHNSON and SHEPARD), A., i, 924.

**1:6-Dihydro-6-pyrimidone-2-thioloxalyl-acetic acid**, diethyl ester (JOHNSON and SHEPARD), A., i, 924.

**1:6-Dihydro-6-pyrimidone-2-thiolpyruvic acid** (JOHNSON and SHEPARD), A., i, 924.

**Dihydroquininaldine bases** (HELLER and SCHMEJA), A., i, 747.

**5:13-Dihydroquindoline** (FICHTER and ROHNER), A., i, 86.

**Dihydroquinoline-dihydroquinoline-(3:3)-spiran, 2-hydroxy-** (RADULESCU), A., i, 498.

**Dihydrostrychnine** (SKITA and FRANCK), A., i, 1017.

**$\alpha$ - and  $\beta$ -Dihydroterpenylamines** and their salts and derivatives (MORRELL), A., i, 914.

**Dihydrothujaketol** (WALLACH and CHALLENGER), A., i, 471.

**Dihydrothujaketon** and its derivatives (WALLACH and CHALLENGER), A., i, 471.

**$\Delta^{2:4}$ -Dihydro-*o*-toluic acid** (PERKIN), T., 758.

**Di-indene** (WEISSGERBER and BREHME), A., i, 623.

**Di-indenedicarboxylic acid** (WEISSGERBER, VOGEL, DOMBROWSKY, and KRAFT), A., i, 623.

**1:3-Diketo-2-anisylidenehydrindamine** (RUHEMANN), T., 1490.

**1:3-Diketo-2-benzylidenehydrindamine** (RUHEMANN), T., 1489.

**$\alpha$ B-Diketobutyric acid, osazones from** (AUWERS, DANNEHL, and BOENNECKE), A., i, 170.

**2:5-Diketo-3-carbamylmethylpyrrolidine-3-carboxylic acid, ethyl ester** (THOLE and THORPE), T., 1689.

**2:6-Diketo-3:5-dicyano-4-*p*-hydroxy-phenyltetrahydropyridine** and its metallic salts (SCLAVI), A., i, 398.

**2:5-Diketo-4-cyanomethylpyrrolidine, 4-cyano-** (THOLE and THORPE), T., 1687.

**2:2-Diketo- $\Delta^{1:1'}$ -dicoumaran ("oxindigo")**, (FRIES and HASSELBACH), A., i, 151; (STOERMER and BRACHMANN), A., i, 220.

**3:5-Diketo-1:2-diethylmalonyl-4:4-dihethylpyrazolidine** (FREUND and FLEISCHER), A., i, 236.

**1:3 Diketo-2-*p*-dimethylaminobenzylidenehydrindamine** (RUHEMANN), T., 1490.

**3:4-Diketo-1:1-dimethylcyclopentane** and its osazone (BLANC and THORPE), T., 2012.

**2:6-Diketo-4:4-dimethylpiperidine, 3-cyano-** (THOLE and THORPE), T., 432.

**2:6-Diketo-4:4-dimethylpiperidine-5-carboxylamide, 3-cyano-, and its sodium salt** (THOLE and THORPE), T., 431.

**2:6-Diketo-4:4-dimethylpiperidine-5-carboxylic acid, 3-cyano-, and its salts** (THOLE and THORPE), T., 432.

**3:5-Diketo-1:2-dipropylmalonyl-4:4-dipropylpyrazolidine** (FREUND, FLEISCHER and ROTHSCHILD), A., i, 237.

**4:6-Diketo-5:5-dipropyl-2-*α*-propylbutyltetrahydropyrimidine** (REMFYR), T., 621.

**Diketoethylapocamphoric acid**, methyl ester (KOMPPA and ROUTALA), A., i, 381.

**4:6-Diketo-5-ethyl-2-propyltetrahydropyrimidine** (REMFYR), T., 620.

**6:6-Diketo-2:2'-ethylthiol-5:5'-dipyrimidine** (JOHNSON : PECK and AMBLER), A., i, 576.

**2:6-Diketohexahydropyrimidine-5-acetamide**, 4:5-dihydroxy- (JOHNSON and AMBLER), A., i, 577.

**1:3-Diketohydrindamine** (RUHEMANN), T., 1488 ; P., 210.

**Diketohydrindylidenediketohydrindamine**, and its ammonium salt (RUHEMANN), T., 1491 ; P., 210.

**Diketohydrindylideneuramil**, potassium salt (RUHEMANN), T., 1491 ; P., 210.

**4:6-Diketo-2-methyl-5:5-diethyltetrahydropyrimidine** and its hydrochloride (FREUND and FLEISCHER), A., i, 236.

**2:6-Diketo-4-methyl-4-ethylpiperidine-5-carboxylamide**, 3-cyano- (THOLE and THORPE), T., 439.

**4:6-Diketo-5-methyl-2-ethyltetrahydropyrimidine** (REMFYR), T., 620.

**4:6-Diketo-2-methyl-5-propyltetrahydropyrimidine** (REMFYR), T., 620.

**1:5-Diketones** (DIECKMANN and v. FISCHER), A., i, 451.

**o-Diketones**, action of hydrazine hydrate on (CURTIUS and KASTNER), A., i, 324.

**α-Diketones**, action of hydrogen peroxide on (BÖESEKEN, LICHTENBELT, MILO, and VAN MARLEN), A., i, 523.

**β-Diketones**, preparation of (ANDRÉ), A., i, 545.

**1:2-Diketo- $\Delta^3$ -cyclopentene**, absorption spectra of some derivatives and isomerides of (PURVIS), T., 107.

**3:4-Diketo-1-phenyl-2-*p*-nitrobenzyl-pyrrolidine-2:5-dicarboxylic acid**, ethyl ester (JOHNSON and BENGIS), A., i, 564.

**3:4-Diketo-1-phenyl-2:5-*di*-*p*-nitrobenzylpyrrolidine-2:5-dicarboxylic acid**, ethyl ester (JOHNSON and BENGIS), A., i, 564.

**3:4-Diketo-1-phenylpyrrolidine-2:5-dicarboxylic acid**, ethyl ester, salts of (JOHNSON and BENGIS), A., i, 564.

**2:3-Diketo-5-phenylpyrrolidine** and its derivatives (MUMM and MÜNCHMEYER), A., i, 80.

**2:5-Diketopiperazine-1:4-dibenzoic acid**, ethyl ester (EINHORN and SEUFFERT), A., i, 45.

**4:6-Diketo-5-propyl-2-butyltetrahydropyrimidine** (REMFYR), T., 621.

**2:6-Diketopyrimidine**, 4-imino-5-oximino-, preparation of, and its derivatives (MERCK), A., i, 167.

**1:3-Diketo-2-salicylidenehydrindamine** (RUHEMANN), T., 1490.

**3:4-Diketo-1:1:2-trimethylcyclopentane** and its osazone and dioxime (BLANC and THORPE), T., 2011.

**3:4-Diketo-1:1:2-trimethylcyclopentane-5(or 2)-carboxylic acid** (BLANC and THORPE), T., 2011.

**1:3-Diketo-2-*o*-veratrylidenehydrindene** (PERKIN, ROBERTS, and ROBINSON), P., 58.

**Dilution** and colour, relation between (PICCARD), A., ii, 561.

**Dilution law**, colorimetric (HANTZSCH), A., ii, 951.

Ostwald's (SEBOR), A., ii, 191.

**Dimenthylamine** and its hydrochloride (MAILHE and MURAT), A., i, 535.

**4:5-Dimethoxyacetophenone**, 2-hydroxy-, and its acetyl derivative (BARGELLINI and AURELI), A., i, 855.

**4:5-Dimethoxy-2-*o*-anisylidene-1-hydindone** (PERKIN, ROBERTS, and ROBINSON), P., 58.

**1:4-Dimethoxyanthraquinone** (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 469.

**1:8-Dimethoxyanthraquinone**, salts of (FISCHER, GROSS, and NEBER), A., i, 887.

**Di-*o*- and *m*-methoxybenzaldehyde**, compounds of, with tin tetra-bromide and -chloride (PFEIFFER, FRIEDMANN, GOLDBERG, PROS, and SCHWARZKOPF), A., i, 791.

**2:4-Dimethoxybenzenearoresorcinol** (KAUFFMANN and KUGEL), A., i, 930.

**4:5-Dimethoxybenzophenone**, 2-hydroxy-, and its acetyl derivative (BARGELLINI and MARTEGANI), A., i, 966.

**Dimethoxybenzophenonehydrazone** (STAUDINGER and KUPFER), A., i, 751.

**3:4-Dimethoxybenzyl alcohol** and its derivatives (TIFFENEAU), A., i, 973.

**3:4-Dimethoxybenzyl chloride** (TIFFENEAU), A., i, 973.

**2:3- and 3:4-Dimethoxybenzylamine** and their salts and derivatives (DOUETTEAU), A., i, 973.

**6:8-Dimethoxy-1-benzyl-3:4-dihydroisoquinoline** and its picrate and hydrochloride (SALWAY), T., 1323 ; P., 192.

**3:4-Dimethoxybenzyldimethylamine** and its salts (TIFFENEAU), A., i, 973.  
**Di-p-methoxybenzylmethylamine** (TIFFENEAU), A., i, 779.  
**3:4-Dimethoxybenzylmethylamine** and its hydriodide (TIFFENEAU), A., i, 973.  
**6:8-Dimethoxy-1-benzyl-2-methyl-1:2:3:4-tetrahydroisoquinoline** and its picrate (SALWAY), T., 1324; P., 192.  
 **$\alpha\alpha$ -Dimethoxy- $\Delta\beta$ -butylene** and  $\beta$ -bromo- (CLAISEN), A., i, 492.  
**Dimethoxycinnamic acid**, amino-, benzoyl derivative, anhydride of (PSCHORR and KNÖFFLER), A., i, 669.  
**2:3-Dimethoxycinnamic acid** (PERKIN, ROBERTS, and ROBINSON), P., 58.  
**4:5-Dimethoxydeoxybenzoic**, 2-hydroxy- (BARGELLINI and MARTEGIANI), A., i, 966.  
**2:2'-Dimethoxy-1:1'-dianthraquinonyl** (BENESCH), A., i, 794.  
**9:9'-Dimethoxydianthrone** (MEYER), A., i, 195.  
**2:4'-Dimethoxydibenzyl** (STOERMER and FRIEMEL), A., i, 632.  
**Dimethoxydiphenylazomethylene** (STAUDINGER and KUPFER), A., i, 752.  
**4:4'-Dimethoxydiphenylmethane**, *di- $\omega$ -chloro-* (STAUDINGER, CLAR, and CZAKO), A., i, 625.  
**4:5-Dimethoxy-1-hydrindone**, and *2-iso-nitroso-* (PERKIN, ROBERTS, and ROBINSON), P., 58.  
**4:6-Dimethoxy-2- $\beta$ -methylaminoethylbenzaldehyde** and its salts (SALWAY), T., 1325; P., 192.  
**3:4-Dimethoxy-5:6-methylenedioxy-phenanthrene-8-carboxylic acid** (GADAMER and KUNTZE), A., i, 1013.  
**3:4-Dimethoxy-5:6-methylenedioxy-8-vinylphenanthrene** (GADAMER and KUNTZE), A., i, 1013.  
**Di- $\omega$ -methoxy-1-methylnaphthalene**, 2-chloro- (SACHS and BRIGL), A., i, 720.  
**2:5-Dimethoxyphenol**, 4-amino-, and its acetyl derivative, and 4-nitroso-, and their derivatives (FABINYI and SZÉKI), A., i, 856.  
**2:5-Dimethoxyphenoxyacetic acid**, 4-acetamino- (FABINYI and SZÉKI), A., i, 856.  
**2:4-Dimethoxyphenylacetic acid** (PSCHORR and KNÖFFLER), A., i, 669.  
**2:3-Dimethoxyphenylacetomethylamine** (DOUETEAU), A., i, 973.  
**4:4'-Dimethoxyphenylacetonitrile** (BISTRZYCKI, PAULUS, and PERRIN), A., i, 868.  
 **$\alpha$ -2':4'-Dimethoxyphenyl-2-amino-3:4-dimethoxycinnamic acid** (PSCHORR and KNÖFFLER), A., i, 669.

**2:5-Dimethoxyphenylaminoformic acid**, 4-hydroxy-, ethyl ester and its derivatives (FABINYI and SZÉKI), A., i, 856.  
**4:4'-Dimethoxy- $\beta$ -phenylcoumarin** (BARGELLINI and LEONARDI), A., i, 902.  
**8:3-Dimethoxyphenylethylamine**, 2(4)-chloro-, hydrochloride (SALWAY), T., 1323.  
**2:3-Dimethoxyphenylmethylcarbinol** and its phenylurethane (PAULY, v. BUTTLAR, and LOCKEMANN), A., i, 785.  
 **$\alpha$ -2:4'-Dimethoxyphenyl-2-nitro-3:4-dimethoxycinnamic acid** (PSCHORR and KNÖFFLER), A., i, 669.  
**8:3-Dimethoxyphenylpropionamide** (SALWAY), T., 1321; P., 192.  
**2:3-Dimethoxy- $\beta$ -phenylpropionic acid** (PERKIN, ROBERTS, and ROBINSON), P., 58.  
**4:5-Dimethoxypropiophenone**, 2-hydroxy-, derivatives of (BARGELLINI and MARTEGIANI), A., i, 855.  
**3:4-Dimethoxyphenylisopropyltrimethylammonium iodide** (ROSEN-MUND), A., i, 34.  
**2:2'-Dimethoxyphthalophenone** (FERRARIO and NEUMANN), A., i, 316.  
**Dimethoxystyrene**,  $\beta$ -nitro- (ROSEN-MUND), A., i, 34.  
**1:4-Dimethoxythioxanthone** (CLARKE and SMILES), T., 1538.  
**4:4'-Dimethoxytriphenylacetone** (VORLÄNDER, FRIEDBERG, VAN DER MERVE, ROSENTHAL, HUTH, and v. BODECKER), A., i, 867.  
**2:2'-Dimethoxytriphenylmethane-2''-carboxylic acid**, and its salts and methyl ester (FERRARIO and NEUMANN), A., i, 317.  
**5:6-Dimethoxy-2- $\alpha$ -veratrylidene-1-hydrindone** (PERKIN, ROBERTS, and ROBINSON), P., 58.  
**Dimethyl- $\beta$ -acetylpropylamine** (FARBEN-FABRIKEN VORM. F. BAYER & Co.), A., i, 598.  
**Dimethylacrylbenzene**. See Phenyl isobutetyl ketone.  
 **$\beta\beta$ -Dimethylacrylic acid**,  $\alpha$ -bromo-, derivatives of (STAUDINGER and OTT), A., i, 640.  
 **$\alpha$ -Dimethylallene**, polymerisation of (LEBEDEFF), A., i, 774.  
**2:6-Dimethyl-4-allyldihydropyridine-3:5-dicarboxylic acid**, ethyl ester (GRISHKEWITSCH-TROCHIMOWSKY), A., i, 320.  
**1:3-Dimethyl-5-allyl- $\Delta^3$ -cyclohexen-5-ol** (MATSCHUREVITSCH), A., i, 962.

**2:6-Dimethyl-4-allylpyridine-3:5-dicarboxylic acid, ethyl ester, platinichloride** (GRISHKEWITSCH-TROCHIMOWSKY), A., i, 320.

**Dimethylaminoacetic acid, santalyl ester and its hydrochloride** (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 137.

**p-Dimethylaminoacetophenone** (STAUDINGER and KON), A., i, 879.

**$\beta$ -Dimethylaminoanilino- $\alpha\beta\beta$ -tetraphenylpropionic acid,  $\beta$ -lactam of** (STAUDINGER and JELAGIN), A., i, 215.

**2-Dimethylaminoanil-1:3-diketohydrindene** (RUHEMANN), T., 796.

**Dimethylaminoanil-3:4-diphenylcyclopenten-1:2-dione and its derivatives** (RUHEMANN and NAUNTON), P., 309.

**2:5-p-Dimethylaminoanil-1-phenyl-2:3-dimethylpyrazole and its salts and derivatives** (MICHAELIS, WURL, and DOEPMANN), A., i, 1041.

**p-Dimethylaminobenzyl-1-aminoanthraquinone** (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), A., i, 995.

**5-Dimethylaminobenzyl-3-methylbenzoic acid, 2-hydroxy-** (ANILINFARBEN- & EXTRAKT-FABRIKEN VORM. J. R. GEIGY), A., i, 978.

**$\delta$ -Dimethylamino- $\beta$ -butanol** (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 599.

**$\delta$ -Dimethylamino- $\beta$ -butanone** (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 599.

**$\delta$ -Dimethylamino- $\gamma$ -methylbutan- $\beta$ -ol and its derivatives** (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 598.

**Dimethylaminomethylene camphor** (STAUDINGER and KON), A., i, 879.

**$\alpha$ -Dimethylaminopentane picrate** (v. BRAUN), A., i, 611.

**Dimethylamino- $\beta$ -phenoxy- $\alpha$ -methoxypropanol, and its methiodide** (LES ÉTABLISSEMENTS POULENC FRÈRES and FOURNEAU), A., i, 291.

**Dimethylaminophenyl sulphide, hydroxy-, sodium sulphonate and thioldimethylanilino-derivative of** (PRESCOTT and SMILES), T., 647.

**4-Dimethylaminophenylazomethine-5-acridine** (PORAI-KOSCHITZ, AUSCHKAP, and AMSLER), A., i, 689.

**4-Dimethylamino-1-phenyl-2:3-dimethyl-5-pyrazolone citrate** (OTTO), A., i, 926.

**p-Dimethylaminotetraphenylethylene** (STAUDINGER and KON), A., i, 879.

**Dimethylaminothioxanthone, hydroxy-, dimethylaminophenylthiol derivative of, and its platinichloride** (MARDEN and SMILES), T., 1357.

**5-Dimethylaminotolylmethyl-3-methylbenzoic acid, 2-hydroxy-** (ANILINFARBEN- & EXTRAKT-FABRIKEN VORM. J. R. GEIGY), A., i, 978.

**Dimethylamino-*p*-tolyloxypropanol, and the hydrochloride of its benzoyl derivative** (LES ÉTABLISSEMENTS POULENC FRÈRES and FOURNEAU), A., i, 291.

**p-Dimethylaminotriphenylethylene** (STAUDINGER and KON), A., i, 879.

**Dimethylammonium nitrite** (RÄY and RAKSHIT), T., 1472; P., 72, 122.

**osmichloride** (GUTBIER and MAISCH), A., i, 18.

**$\delta\delta$ -Dimethyl- $\Delta^{\alpha}$ -amylene,  $\gamma$ -chloro-** (UMNOVA), A., i, 249.

**Dimethylanthydrovalolactone** (LOSANTITSCH), A., i, 804.

**Dimethylaniline, reaction of cellulose with** (WALTER), A., i, 124.

**2:6-dinitro-** (BORSCHE and RANTSCHEFF), A., i, 330.

**Dimethyl-*p*-anisidine, 2:6-dinitro-** (REVERDIN and DE LUC), A., i, 965.

**Dimethylanthranilic acid, methyl ester action of nitrous acid on** (HOUBEN), A., i, 293.

**2:4-Dimethylanthraquinone, 1-amino-** (BADISCHE ANILIN- & SODA-FABRIK), A., i, 885.

**2:6-Dimethylanthraquinone, 1:5-diamino-, 1:5-*d*-iodo-, and 1:5-*d*-nitro-** (SEER), A., i, 386.

**Dimethylatropyl chloride and *p*-toluidide** (BLAISE and HERMAN), A., i, 881.

**Dimethylatropylethane and its *p*-nitrophenylhydrazone** (BLAISE and HERMAN), A., i, 881.

**2:4-Dimethylbenzaldehyde, 3:5-dichloro-, and its semicarbazone** (AUWERS), A., i, 384.

**2:4-Dimethylbenzamide, 6-chloro-** (AUWERS), A., i, 385.

**2:5-Dimethylbenzimidazole, nitro-, constitution and derivatives of** (MARON and SALZBERG), A., i, 1032.

**2:4-Dimethylbenzoic acid, 3-amino-, 3-iodo-, and 3-nitro-5-amino-, and their esters and derivatives** (WHEELER and HOFFMAN), A., i, 446.

**3:5-dichloro-, and its methyl ester** (AUWERS), A., i, 384.

**2:4-Dimethylbenzonitrile, 6-chloro-** (AUWERS), A., i, 385.

**2:4-Dimethylbenzylidene chloride, 3:5-dichloro-** (AUWERS), A., i, 384.

**1:4-Dimethyl-5-bromomethylidihydro-uracil, 4-bromo-5-hydroxy** (BREMER), A., i, 161.

**1:4-Dimethyl-5-dibromomethylidihydro-uracil, 4-bromo-5-hydroxy** (BREMER), A., i, 161.

**1:4-Dimethyl-5-bromomethylenedihydro-uracil**, 4-bromo- (BREMER), A., i, 161.

**Dimethylbulbocapnimethine** and its salts (GADAMER and KUNTZE), A., i, 1013.

**$\beta$ -Dimethyl- $\Delta^{\alpha}$ -butadiene**, preparation of (BADISCHE ANILIN- & SODA-FABRIK), A., i, 829.

compound of sulphurous acid with (BADISCHE ANILIN- & SODA-FABRIK), A., i, 938.

**Dimethylbutadiene-caoutchouc**, "normal" and "sodium," and their derivatives (HARRIES and NERESHEIMER), A., i, 800.

**$\alpha$ -Dimethylbutaldehyde**, derivatives of (RICHARD), A., i, 7.

**Dimethylcyclobutandione** (STAUDINGER, KLEVER, and MAYER), A., i, 308.

**4:8-Dimethyl-6-*tert*-butylooumarin** (CLAYTON), P., 246.

**1:3-Dimethyl-5-*tert*-butylcyclohexan-2-ol** (DARZENS and ROST), A., i, 290.

**1:3-Dimethyl-5-*tert*-butylcyclohexan-2-one** (DARZENS and ROST), A., i, 290.

**$\alpha\beta$ -Dimethylbutyric acid**,  $\alpha$ -hydroxy-, ethyl ester (DARZENS), A., i, 259.

**$\beta\beta$ -Dimethylbutyric acid**,  $\alpha$ -amino-, ethyl ester (RICHARD), A., i, 7.

$\alpha$ -hydroxy-, esters and derivatives of (RICHARD), A., i, 8.

**Dimethylcaoutchouc**, dry distillation of (RICHARD), A., i, 733.

**$\alpha$ -Dimethylcarbamide** (DIELS and GOLLMANN), A., i, 956.

**4:Dimethylcarbonatobenzyloxybenzoic acid**, 3-nitro- (FRANCIS and NIERENSTEIN), A., i, 644.

**Dimethylcarbanatodigentisic acid** (FISCHER and FREUDENBERG), A., i, 875.

**Dimethylcarbonatodi- $\beta$ -resorcyclic acid** (FISCHER and FREUDENBERG), A., i, 875.

**Dimethylcetylamine** and its salts (v. BRAUN), A., i, 612.

**1:3-Dimethyl-4- $\beta\beta$ -dichloroethylbenzene**, 5-chloro- (AUWERS), A., i, 385.

**2:6-Dimethyl-4-chloromethylidihydropyridine-3:5-dicarboxylic acid**, ethyl ester (BENARY), A., i, 320.

**1:4-Dimethyl-1-dichloromethyl- $\Delta^{2:5}$ cyclohexadiene**, 3:5-dichloro- and 3-chloro-4-hydroxy- (AUWERS), A., i, 383, 384.

**1:3-Dimethyl-1-dichloromethyl- $\Delta^{2:5}$ cyclohexadiene-4-one**, 5-chloro- (AUWERS), A., i, 384.

**1:3-Dimethyl-1-dichloromethyl- $\Delta^2$ cyclohexen-4-one**, 5:6-dichloro- (AUWERS), A., i, 384.

**1:3-Dimethyl-1-dichloromethyl-4-methylene- $\Delta^{2:5}$ cyclohexadiene**, 5-chloro- (AUWERS), A., i, 385.

**2:6-Dimethyl-4-chloromethylpyridine**

**3:5-dicarboxylic acid**, ethyl ester (BENARY), A., i, 320.

**Dimethylchrysazin**. See 1:8-Dimethoxy-anthraquinone.

**Dimethylcreatine** aurichloride (KUNZE), A., i, 21.

**s-Dimethylidioamylethylenediamine** (CLARKE), T., 1934.

**5:5'-Dimethyl-1:2'-dicoumarone**, 2:1'-dihydroxy-, derivatives of (FRIES and PFAFFENDORF), A., i, 150.

**Dimethyl-*NN'*-diethyl-*pp'*-diamino-diphenylmethane** (FRÖHLICH), A., i, 493.

**NN'-Dimethyl-*NN'*-diethylbenzidine** and its derivatives (FRÖHLICH), A., i, 493.

**Dimethylidihylsilicane** (BYGDEN), A., i, 846.

**Dimethylidicyclohexene** (WALLACH and PAULY), A., i, 474.

**5:10-Dimethylidihydroacridine**, 3:7-dibromo-5-cyano- (KAUFMANN, WIDMER, and ALBERTINI), A., i, 750.

5-cyano-, and its picrate (KAUFMANN, ALBERTINI, and WIDMER), A., i, 751.

**5:10-Dimethylidihydroacridine-5-carboxylic acid** (KAUFMANN, ALBERTINI, and WIDMER), A., i, 751.

**4:6-Dimethylidihydro-2-pyrimidone**, 5:5:6-tribromo- (STARK), A., i, 574.

**2:6-Dimethylidihydroquinoline** and its salts and tetrabromo- (HELLER and SCHMEJA), A., i, 748.

**2:7-Dimethylidihydroquinoline** (HELLER and SCHMEJA), A., i, 748.

**2:8-Dimethylidihydroquinoline** and tribromo-, and tetrabromo- (HELLER and SCHMEJA), A., i, 748.

**$\alpha$ -Dimethylidihydouracil** (2:6-dioxy-3:4-dimethyltetrahydropyrimidine), trihydroxy- (HENKEL), A., i, 159.

**$\beta$ -Dimethylidihydouracil** (2:6-dioxy-1:4-dimethyltetrahydropyrimidine), trihydroxy- (HENKEL), A., i, 160.

**Dimethyllydioscoridine** (GORTER), A., i, 561.

**Dimethylidipentene** and its salts (RICHARD), A., i, 733.

**4:4'-Dimethylidiphenic acid** (LIEBERMANN), A., i, 656.

**2:2'-Dimethylidiphenyl-6:6'-dicarboxylic acid** (MAYER), A., i, 870.

**2:2'-Dimethylidiphenyl-5:5-diphthaloylic acid** (SCHOLL and SEER), A., i, 453.

**4:4'-Dimethylidiphenyl-3-phthaloylic acid** (SCHOLL and SEER), A., i, 453.

**2:6-Dimethyl-3:4:7:8-diphthaloylthi-anthren** (SCHOLL and SEER), A., i, 558.

**NN'-Dimethyl-NN'-dipropyl-*pp'*-di-aminodiphenylmethane** (FRÖHLICH), A., i, 494.

**Dimethylephedrine** auri- and platinichlorides (SCHMIDT), A., i, 562.

**Dimethylenedioxystilbene** and its dibromide (STOBBE and LENZNER), A., i, 374.

**$\beta\epsilon$ -Dimethylene- $\Delta\gamma$ -hexinene** (DUPONT), A., i, 174.

**Dimethylerythroapocyanine** hydriodide (KAUFMANN, STRÜBIN, ANASTACHEWITCH, POPPER, and SZNAJDER), A., i, 328.

**Dimethylethylisobutylsilicane** (BYGDEN), A., i, 846.

**1:9-Dimethyl-7-ethylspiro-5:5-dihydantoin** (*hypoethyltheobromine*) (BILTZ and KREBS), A., i, 241.

**Dimethylethylpropylsilicane** (BYGDEN), A., i, 846.

**2:4-Dimethyl-3-ethylpyrrole** and its picrate (KNORR and HESS), A., i, 1020.

**2:5-Dimethyl-3-ethylpyrrole** (KNORR and HESS), A., i, 1019.

**2:5-Dimethyl-3-ethylpyrrole-4-carboxylic acid** and its ethyl ester (KNORR and HESS), A., i, 1019.

**Dimethylethyl- $\psi$ -thiocarbamide** ethiodide (SCHENCK), A., i, 843.

**2:5-Dimethylfuran**, *di- $\omega$ -hydroxy*-, and its diacetyl derivative (BLANKSMA), A., i, 75.

**Dimethylglutaconic acid**, derivatives of (THOLE and THORPE), T., 2235. ethyl ester and silver salt (THOLE and THORPE), T., 2203.

**Dimethylglutaranyl** (KIJNER), A., i, 42.

**$\alpha\alpha$ -Dimethylglutaric acid**, silver and its aniline salts of (KIJNER), A., i, 42.

**$\beta\beta$ -Dimethylglutaric acid**, preparation of (THOLE and THORPE), T., 434.

**$\beta\beta$ -Dimethylglycidic acid**, ethyl ester condensation of, with halogen compounds (DARZENS), A., i, 259. condensation of, with ethyl bromoacetate (DARZENS and SEJOURNÉ), A., i, 420.

**2:5-Dimethyl- $\Delta^{2:5}$ -cycloheptadiene-7-carboxylic acid** and its derivatives (BUCHNER and SCHULZE), A., i, 52.

**2:5-Dimethyl- $\Delta^{2:6}$ -cyclo-heptadiene-7-carboxylic acid** and its amide (BUCHNER and SCHULZE), A., i, 52.

**2:5-Dimethylcycloheptane-7-carboxylic acid** and its amide and 7-bromo- (BUCHNER and SCHULZE), A., i, 52.

**$\beta\zeta$ -Dimethylheptan- $\beta\delta\zeta$ -triol** (BOUVEAULT and LEVALLOIS), A., i, 3.

**2:5-Dimethyl- $\Delta^{2:4:7}$ -cycloheptatriene-7-carboxylic acid** (BUCHNER and SCHULZE), A., i, 51.

**2:5-Dimethyl- $\Delta^{2:5:7}$ -cycloheptatriene-7-carboxylic acid** and its derivatives (BUCHNER and SCHULZE), A., i, 51.

**2:5-Dimethyl- $\Delta^{7:2:5}$ -cycloheptatriene-7-carboxylic acid** (BUCHNER and SCHULZE), A., i, 51.

**Dimethyl-*n*-heptylamine** and its salts (v. BRAUN), A., i, 611.

**$\beta\gamma$ -Dimethylhexane**, synthesis of (CLARKE), A., i, 345.

**$\beta\gamma$ -Dimethyl- $\beta$ -hexanol** (CLARKE), A., i, 345.

**$\beta\gamma$ -Dimethyl- $\gamma$ -hexanol** (CLARKE), A., i, 345.

**Dimethylcyclohexene oxide** and its salts (PRILESCHAEFF), A., i, 255.

**$\beta\epsilon$ -Dimethyl- $\Delta\Delta$ -hexinene- $\beta\epsilon$ -diol** and its derivatives (DUPONT), A., i, 173, 554.

**Dimethyl-*n*-hexylamine** and its salts (v. BRAUN), A., i, 611.

**Dimethylhomophthalide** (BAUER and WÖLZ), A., i, 872.

**3:[2:4-Dimethylhydrocumarilyl]-4:6-dimethylcoumarin** (FRIES and VOLK), A., i, 205.

**2:6-Dimethyl-4-iodomethylpyridine-3:5-dicarboxylic acid**, ethyl ester (BENARY), A., i, 320.

**$\alpha$ -Dimethyl-lävulic acid**, electrolytic reduction of (TAFEL and EMMERT), A., i, 764.

**$\alpha\beta$ -Dimethyl-lävulic acid** and its derivatives (WILLSTÄTTER and BROSSA), A., i, 707.

**Dimethylmalonylmalonamide** (REMFRY), T., 616.

**Dimethylmalonylmethylmalonamide** (REMFRY), T., 617.

**1:1-Dimethyl-2-methylene-3-cyclo-but-anone** and its semicarbazone (LEBEDEFF), A., i, 775.

**1:4-Dimethyl-5-methylenedihydrouracil**, 4-bromo- (BREMER), A., i, 161.

**1:1-Dimethyl-4-methylenecyclo- $\Delta^{2:5}$ -hexadiene** (AUWERS and MÜLLER), A., i, 621.

**1:1-Dimethyl-2-methylene-3-isopropenylcyclobutane** (LEBEDEFF), A., i, 775.

**$\alpha$ - and  $\beta$ -Dimethylmorphimethine** and their methiodides (PSCHORR, DICKHÄUSER, and D'AVIS), A., i, 908.

**$\gamma$ ,  $\delta$ , and  $\epsilon$ -Dimethylmorphimethine** methiodides (PSCHORR, DICKHÄUSER, and D'AVIS), A., i, 908.

**2:4-Di(methylnitroamino)toluene**, 3:5-dinitro- (BLANKSMA), A., i, 39.

**$\beta\iota$ -Dimethylnonan- $\beta\iota$ -diol** (v. BRAUN and SOBECKI), A., i, 701.

**$\beta\iota$ -Dimethylnonane**,  $\beta\iota$ -dibromo- (v. BRAUN and SOBECKI), A., i, 701.

**$\alpha\alpha$ -Dimethyl- $\Delta\beta$ -nonenyl alcohol** (HARDING, WALSH, and WEIZMANN), T., 450.

**2:5-Dimethyl- $\Delta^{2:4}$ -norcaradienene carboxylic acid**, ethyl ester (BUCHNER and SCHULZE), A., i, 50.

**2:5-Dimethyl- $\Delta^{2:4}$ -norcaradiene-7-carboxylamide** (BUCHNER and SCHULZE), A., i, 51.

**$\beta\zeta$ -Dimethyloctan- $\gamma\gamma$ -dione- $\alpha$ -ol** and its semicarbazone (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 102.

**$\beta\zeta$ -Dimethyl- $\Delta\alpha$ -octen- $\gamma\gamma$ -dione** and its semicarbazone (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 114.

**Dimethyl-*n*-octylamine** and its salts (v. BRAUN), A., i, 612.

**1:1-Dimethylcyclopentan-2-ol** (KIJNER), A., i, 42.

**1:1-Dimethylcyclopentanone**, derivatives of (KIJNER), A., i, 43.

**$\beta\delta$ -Dimethyl- $\Delta\alpha$ -penten- $\gamma$ -ol** and its acetyl derivative (UMNOVA), A., i, 249.

**2:7-Dimethylphenanthraquinone** and its diacetyl derivative (LIEBERMANN), A., i, 656.

**2:7-Dimethylphenazine** and its 5:10-oxide and their salts (BAMBERGER, and HAM), A., i, 686.

**2:7-Dimethylphenothioxin** and its oxides (HILDITCH and SMILES), T., 412.

**2:7-Dimethylphenothioxonium** hydroxide and its picrate and platinum chloride (HILDITCH and SMILES), T., 981.

**2:4-Dimethylpiperidine** and its oxalate (WOHL and MAAG), A., i, 25.

**$\alpha\alpha$ -Dimethylpropaldehyde**, trimeric (RICHARD), A., i, 8.

**1:2-Dimethylcyclopropane** (ÖSTLING), P., 315.

**$\beta\beta$ -Dimethylpropane- $\alpha\alpha\gamma\gamma$ -tetracarboxylic acid**, imide, diimino-di-imide, and di-imide, and their derivatives (THOLE and THORPE), T., 433.

**1:1-Dimethyl-3-isopropenyl-2-cyclo-butane** (LEBEDEFF), A., i, 776.

**$\beta\beta$ -Dimethylpropyl alcohol**, derivatives of (RICHARD), A., i, 6.

**$\beta\beta$ -Dimethylpropylideneaniline** (RICHARD), A., i, 7.

**2:5-Dimethyl-3-propylpyrrole** (KNORR and HESS), A., i, 1019.

**8:16'-Dimethylpyranthrone** (SCHOLL, POTSCHEWAUSCHEG, and LENKO), A., i, 1008.

**3-5-Dimethylpyrazoleimino-3'-phenyliso-oxazolone** (MEYER), A., i, 687.

**2:6-Dimethylpyridine-3:5-dicarboxylic acid-4-methylnitrolic acid**, ethyl ester (BENARY), A., i, 320.

**2:6-Dimethylpyridine-3:4:5-tricarboxylic acid**, diethyl ester (BENARY), A., i, 320.

**4:6-Dimethyl-2-pyrimidone** (acetylacetone-carbamide), 5-bromo-, dibromo-, and their salts (STARK and HORRMANN), A., i, 574.

**Dimethylpyrone** (v. BAEYER and PICCARD), A., i, 901.

**3:4-, and 3:5-Dimethyl- $\alpha$ -pyrone**, 6-chloro-, and 6-hydroxy- (THOLE and THORPE), T., 2234.

**$\beta$ -Dimethylpyrrole**, action of sulphuryl chloride (COLACICCHI), A., i, 224.

**2:4-Dimethylpyrrole**, nitro-, and its sodium salt (ANGELI and ALESSANDRI), A., i, 398.

**1:4-Dimethylquinol**, 3:5:6-tribromo- (ZINCKE and BREITWEISER), A., i, 216.

**1:4-Dimethylquinonitrile**, 3:4:6-tribromo-, and its additive compound with nitric acid (ZINCKE and BREITWEISER), A., i, 216.

**2:4-Dimethylstyrene**, 6- $\omega$ -dichloro- (AUWERS), A., i, 385.

**Dimethylsulphamide**, dinitroso- (WOHL and KOCH), A., i, 37.

**2:6-Dimethylthianthren-3:7-diphthaloylic acid** (SCHOLL and SEER), A., i, 558.

**$\beta\beta'$ -Dimethylthiocarbamide**, salts of (SCHENCK), A., i, 843.

**$\alpha\beta$ -Dimethylthiocarbamide**, aurichloride of (SCHENCK), A., i, 842.

**Dimethylthiolanilino-*p*-benzoquinone** (ZINCKE and JÖRG), A., i, 40.

**Di-*p*-methylthioldiazoaminobenzene** (ZINCKE and JÖRG), A., i, 40.

**3:3'-Dimethylthioldibenzyl**, 2:5:2':5'-tetrabromo-4:4'-dihydroxy-, and its derivatives (ZINCKE, FROHNEBERG, and KEMPF), A., i, 441.

**Dimethylthiolhydrobenzoin** dimethyl ether, tetrabromodihydroxy- and its diacetyl derivative (ZINCKE, FROHNEBERG, and KEMPF), A., i, 441.

**3:3'-Dimethylthiolstilbene**, 2:5:2':5'-tetrabromo-4:4'-dihydroxy-, and its derivatives (ZINCKE, FROHNEBERG, and KEMPF), A., i, 441.

**3:3'-Dimethylthiolstilbene-*p*-quinone** 2:5:2':5'-tetrabromo- (ZINCKE, FROHNEBERG, and KEMPF), A., i, 441.

**1:3-Dimethylthioxanthone** (MARDSEN and SMILES), T., 1356.

**1:4-Dimethylthioxanthone** (MARDSEN and SMILES), T., 1355.

**Dimethyl-*p*-toluidine**, absorption spectra of the nitration products of (MORGAN and CLAYTON), T., 1941; P., 233.

**Dimethyl-*p*-toluidine**, 2:3:6-*trinitro*- (MORGAN and CLAYTON), T., 1942; P., 233.

**$\alpha$ -Dimethyl- $\Delta^{\kappa}$ -undecenyl alcohol** (HARDING, WALSH, and WEIZMANN), T., 449.

**$\alpha$ -Dimethyluracil** (2:6-dioxy-3:4-dimethylidihydropyrimidine), amino-, and nitro- (HENKEL), A., i, 159.

**$\beta$ -Dimethyluracil**, (2:6-dioxy-1:4-dimethylidihydropyrimidine), amino-, bromo-, and nitro- (HENKEL), A., i, 160.

**3:7-Dimethyluric acid**, degradation of (BILTZ and TOPP), A., i, 692.

***N*-*N'*-Di- $\alpha$ -naphthaquinonyl-*p*-phenylenediamine** (PUMMERER and BRASS), A., i, 655.

**Dinaphthathiophen** and its hexabromo- and tetranitro- derivatives (LANFRY), A., i, 555.

**2:6-Di- $\alpha$ -naphthoylanthraquinone** (SEER), A., i, 386.

**3:6-Di- $\beta$ -naphthylamino-9-phenyl-xanthenyl chloride** (POPE and HOWARD), T., 552.

**$\alpha$ -Dinaphthylcarbinol** and its compound with benzene (TSCHITSCHIBBIN), A., i, 277.

**$\alpha$ - $\beta$ -Dinaphthylmethane** (TSCHITSCHIBBIN), A., i, 278.

**$\alpha\beta$ - and  $\beta\beta$ -Dinaphthylmethyl bromide** (TSCHITSCHIBBIN), A., i, 278.

**$\alpha$ -Dinaphthyl- $\beta$ -methylpropane- $\alpha\beta$ -diol** (PARRY), T., 1174; P., 142.

**Di- $\alpha$ - and  $\beta$ -naphthyl *p*-phenylene disulphides** (BOURGEOIS and FOUASSIN), A., i, 964.

**4:4'-Di** (2:6-dinitrobenzeneazo)-azoxybenzene (BORSCHE and RANTSCHEFF), A., i, 331.

**Dionine** oxide and its hydriodide (FREUND and SPEYER), A., i, 77.

**Dioscine**, compounds of, with cholesterol (YAGI), A., i, 140.

**Dioscorine** and its salts (GORTER), A., i, 222, 561.

**Dioxydethoxydimethylidihydropyrimidine**. See Diethoxydimethylidihydrouracil.

**2:6-Dioxy-3:4- and 1:4-dimethylidihydropyrimidine**. See  $\alpha$ - and  $\beta$ -Dimethyluracil.

**2:6-Dioxy-3:4- and 1:4-dimethyltetrahydropyrimidine**. See  $\alpha$ - and  $\beta$ -Dimethylidihydrouracil.

**2:6-Dioxy-5:5-diethoxy-1:4-dimethylidihydropyrimidine**. See 5:5-Diethoxy- $\beta$ -dimethylidihydrouracil.

**2:6-Dioxy-5:5-diethoxy-3:4-dimethylidihydropyrimidine**. See 5:5-Diethoxy- $\alpha$ -dimethylidihydrouracil.

**2:6-Dioxyhexahydropyrimidine-5-acetamide**, 4:5-dibromo-, and its picrate (JOHNSON and AMBLER), A., i, 576.

**2:8-Dioxy-9-methylpurine** (JOHNS), A., i, 507.

**Dioxy-2-methylthiophen** (LANFRY), A., i, 1009.

**2:8-Dioxypurine** and its salts (JOHNS), A., i, 242.

**Dioxathiophen** (LANFRY), A., i, 740.

**Dipentecosylcarbinol** and its acetate (EASTERFIELD and TAYLOR), T., 2302; P., 279.

**Dipentene nitrosoazide** and its phenylcarbamyl derivative (FORSTER and VAN GELDEREN), T., 2062; P., 195.

**Dipeptides**, synthesis of, from  $\alpha$ -amino-lauric acid (HOPWOOD and WEIZMANN), T., 571; P., 55.

**Diphenacyl-*p*-anisidine** (BUSCH and HEFELE), A., i, 584.

**Di-*p*-phenetyl disulphoxide** (HILDITCH), T., 1097.

**Diphenoperazine**, dichloro-, and its chloride (WIELAND and SÜSSER), A., i, 571.

**Diphenoxydiphenylmethane** (WIELAND), A., i, 851.

**Diphenyl derivatives** (MAYER), A., i, 869.

**sulphide**, action of bromine on (BÖESEKEN), A., i, 41.

**dibromide** and dichloride, and 4:4'-dibromo-, dibromide and perbromide, and 4:4'-dichloro- (FRIES and VOGT), A., i, 538.

**sulphoxide**, action of bromine on (BÖESEKEN), A., i, 41.

**4:4'-dibromo-** and **4:4'-dichloro-** (FRIES and VOGT), A., i, 538.

**Diphenyl**, 2:2'-dibromo-, and 2:2'-dichloro- (DOBBIE, FOX, and GAUGE), T., 1615; P., 217.

**3:5:3':5'-tetrahydroxy-**, phthaleins from, and their derivatives (MEYER and MEYER), A., i, 872.

**octahydroxy-**, and its acetyl derivative (PERKIN), T., 1447; P., 195.

**2-nitro-**, sulphide (BOURGEOIS and HUBER), A., i, 964.

**2:6:2':6'-tetranitro-** (BORSCHE and RANTSCHEFF), A., i, 331.

**Diphenylaceanthrene glycol** (LIEBERMANN and ZSUFFA), A., i, 388.

**Diphenylaceanthrenone** (LIEBERMANN and ZSUFFA), A., i, 388.

**Diphenylacetic acid**, *p*-bromo- and *p*-chloro-*o*-hydroxy-, lactones (STOERMER and HILDEBRANDT), A., i, 666.

**Diphenylacetic acid**, 4-hydroxy-, ethyl and methyl esters (VORLÄNDER, FRIEDBERG, VAN DER MERVE, ROSENTHAL, HUTH, and v. BOEDECKER), A., i, 867.

**Diphenylacetone**, *pp'*-dinitro-, and its phenylhydrazone (WEDEKIND, HÄUSSERMANN, WEISSWANGE, and MILLER), A., i, 220.

**Diphenylacetophenylhydroxylamine**, chloro- (STAUDINGER and JELAGIN), A., i, 215.

**Diphenylacetylphenylimino-chloride** (STAUDINGER, CLAR, and CZAKO), A., i, 625.

**$\beta\beta$ -Diphenylacrylic acid**, methyl ester (POSNER), A., i, 53.

**$\beta\gamma$ -Diphenyladipic acid**,  $\beta\gamma$ -dihydroxy-, and its derivatives (BESCHKE, WINOGRAD-FINKEL, and KÖHRES), A., i, 873.

**Diphenylamine**, iodomagnesium derivative of (ODDO), A., i, 489.

**Diphenylamine**, *o*-amino-*p*-hydroxy- (WIELAND and WECKER), A., i, 83.

2:6-diamino, 2:6-dinitro-, and 6-nitro-2-amino- (BORSCHE and RANTSCHOFF), A., i, 330.

**2:4-Diphenyl*o*aminobenzophenone**, 3:4:5-trihydroxy- (EHRMANN), A., i, 459.

**Diphenylaminoguanazole** and its picrate and hydrochloride (PELLIZZARI), A., i, 338.

**$\alpha$ -Diphenylaminotridiphenylamine** (WIELAND and SÜSSER), A., i, 571.

**Diphenylisoamylphosphine sulphide** (ARBUSOFF), A., i, 100.

**Diphenylisoamylthiocarbamide** (WARRUNIS), A., i, 39.

**2:4-Diphenyl-1-*o*-anisylidihydro-1:2:3-triazole** (BUSCH and HEFELE), A., i, 584.

**1:3-Diphenyl-4-anisylidenehydantoin**, 2-thio- (WHEELER and BRAUTLECHT), A., i, 502.

**Diphenylbenzamide** (v. MEYER and NICOLAUS), A., i, 121.

**Diphenylbenzylhydrazidine**, constitution of (BUSCH and RUPPENTHAL), A., i, 86; (WHEELER and JOHNSON), A., i, 166.

**Diphenylbenzfulvene** (GRIGNARD and COURTOT), A., i, 193.

**Di-*p*-phenylbenzhydrol** (SCHLENK, RENNIN, and RACKY), A., i, 596.

**2:6-Diphenyl-1-benzyl-1-ethylpiperidinium iodide** (SCHOLTZ), A., i, 327.

**$\alpha\zeta$ -Diphenyl- $\epsilon$ -benzyl- $\Delta\alpha$ -hexadien- $\epsilon$ -ol** and its tetrabromide (REYNOLDS), A., i, 861.

**$\alpha\zeta$ -Diphenyl- $\gamma$ -benzyl- $\Delta\alpha$ -hexen- $\epsilon$ -one** and its dibromide (REYNOLDS), A., i, 861.

**$\alpha$ -Diphenylbenzylidenebenzylhydr-azidine** (BUSCH and RUPPENTHAL), A., i, 87.

**1:3-Diphenyl-4-benzylidenehydantoin**, 2 thio- (WHEELER and BRAUTLECHT), A., i, 502.

**3:5-Diphenyl-2-benzylpyridine**, 4:6-dihydroxy- (WEDEKIND, HÄUSSERMANN, WEISSWANGE, and MILLER), A., i, 220.

**3:5-Diphenyl-2-benzyl-1:4:6-pyronone**, and its derivatives (WEDEKIND, HÄUSSERMANN, WEISSWANGE, and MILLER), A., i, 219.

**Diphenylbidi-*guanide*** and its salts (COHN), A., i, 929.

**Diphenylbisazobisphenylisooxazolone** (MEYER), A., i, 341.

**Diphenylbisazo- $\beta$ -naphthol**, 2:2'-di-chloro-5:5'-dinitro- (CHEMISCHE FABRIK GRIESHEIM-ELEKTRON), A., i, 493.

**Diphenylbromocyclobutylcarbinyl methyl ether** (KIJNER), A., i, 43.

**4:5-Diphenyl-1-*p*-bromophenylpyrazole** (WISLICENUS and RUTHING), A., i, 304.

**1:3-Diphenylcyclobutan-2:4-dione** (STAUDINGER and BEREZA), A., i, 307.

**1:3-Diphenylcyclobutane-2:4-di- $\alpha$ -cyanoacrylic acid**, ethyl and methyl esters (REIMER), A., i, 447.

**1:3-Diphenyl- $\Delta^1$ -cyclobuten-2-ol-4-one** (STAUDINGER and BEREZA), A., i, 307.

**Diphenylcyclobutylcarbinol bromide** (KIJNER), A., i, 43.

**Diphenylcyclobutylidenemethane** and its derivatives (KIJNER), A., i, 43.

**Diphenylcyclobutylmethane** and di-nitro- (KIJNER), A., i, 43.

**Diphenylcyclobutylphosphine sulphide** (ARBUSOFF), A., i, 100.

**Diphenylbutyramide** (v. MEYER and NICOLAUS), A., i, 121.

**$\beta\gamma$ -Diphenylbutyrolactone- $\gamma$ -acetic acid.** See 5-Keto-2:3-diphenyltetrahydrofuran-2-acetic acid.

**Diphenylcarbamic acid**, esters of (v. MEYER and NICOLAUS), A., i, 121.

**Diphenylcarbamic anhydride** (HERZOG and BUDY), A., i, 680.

**$\epsilon$ -Diphenylcarbamide-6:6'-disulphonic acid**, 2:2'-diamino-4:4'-dihydroxy- (AKTIEN-GESELLSCHAFT FÜR ANILINFABRICATION), A., i, 584.

**$\epsilon$ -Diphenylcarbamidobenzoic acid** and its ethyl ester (v. MEYER and NICOLAUS), A., i, 121.

**$\alpha$ -Diphenylcarbamidohexoic acid** (v. MEYER and NICOLAUS), A., i, 121.

**$\alpha$ -Diphenylcarbamidopropionic acid** (v. MEYER and NICOLAUS), A., i, 121.

**Diphenylcarbamyl** cyanide, and its derivatives (v. MEYER and NICOLAUS), A., i, 121.

**Diphenylcarbamylazophenol** (v. MEYER and NICOLAUS), A., i, 121.

**N-Diphenylcarbamyl**hydroquinoline, C-hydroxy-, and its ethyl and methyl ethers (HERZOG and BUDY), A., i, 680.

**Diphenylcarbamylloximes** (DUNN), P., 239.

**s-Diphenylcarbamylphenylhydrazide.** See Triphenylsemicarbazide.

**Diphenylcarbamylpyridinium** hydroxide (HERZOG and BUDY), A., i, 680.

**Diphenylcarbamylquinolinium** chloride and platinichloride (HERZOG and BUDY), A., i, 680.

**Diphenyl-4-carboxylic acid** and its sodium salt (LIEBERMANN and ZSUFFA), A., i, 388.

**2:4-Diphenyl-1-p-chlorophenyl**hydro-1:2:3-triazole (BUSCH and HEFEL), A., i, 584.

**δ-Diphenyl-α-p-chlorophenyl**fulgenic acid and its salts (STOBBE and KOHLMANN), A., i, 380.

**δ-Diphenyl-α-p-chlorophenyl**fulgide (STOBBE and KOHLMANN), A., i, 380.

**Diphenyl-mono- and m-di-chloroquinomethane** (STAUDINGER and BEREZA), A., i, 462.

**β-Diphenylcrotonolactonic acid**, δ-hydroxy-, and its lactone (KOHLER), A., i, 985.

**βγ-Diphenylcrotonolactone-γ-acetic acid.** See 5-Keto-2:3-diphenyl-2:5-dihydrofuran-2-acetic acid.

**2:4-Diphenyl-1-γ-cumyldihydro-1:2:3-triazole** (BUSCH and HEFELE), A., i, 584.

**Diphenyl-2:2'-diacrylic acid** (MAYER), A., i, 870.

**Diphenyldianisylethylene** (STAUDINGER and KON), A., i, 879.

**2.2'-Diphenyl-10:10'-dianthrone-9:9'** (SCHOLL and NEOVIUS), A., i, 452.

**Diphenyldiisobutylphosphonium** iodide (ARBUSOFF), A., i, 100.

**Diphenyldiethysilicoethylene** (KIPPING), P., 144.

**βγ-Diphenyl-αδ-dihydromuconic acid** and its ethyl ester and derivatives (BESCHKE, WINOGRAD-FINKEL, and KÖHRES), A., i, 874.

**Diphenyldihydrophenazine** and its bromide (WIELAND and LECHER), A., i, 569.

**1:4-Diphenyl-3:6-dimethyl-1:2:7-benz-triazole** (BÜLOW and HAAS), A., i, 88.

**αβ-Diphenyl-γγ-dimethyl-Δα-butylene** (LUCAS), A., i, 636.

**αs-Diphenyldimethylethylene oxide** (PARRY), T., 1172; P., 142.

**2:6-Diphenyl-3:3-dimethylcyclohexan-2-ol-4-one-1-carboxylic acid**, ethyl ester (DIECKMANN and v. FISCHER), A., i, 451.

**Diphenyldimethylsulphamide** (WOHL and KOCH), A., i, 37.

**2:5-Diphenyl-2:5-dimethyltetrahydro-oxazol-4-one** and its phenylcarbimide derivative (STAUDINGER and RUŽICKA), A., i, 463.

**Di-p-phenyldiphenylmethylcarbinol** (SCHLENK and WEICKEL), A., i, 546.

**Diphenyl-4:4'-diphthaloylic acid** (SCHOLL and NEOVIUS), A., i, 453.

**Diphenylene** (DOBBIE, FOX, and GAUGE), T., 683; P., 90.

**Diphenyleneazomethylene** (STAUDINGER and KUPFER), A., i, 751.

**δ-Diphenylene-αα-dimethyl**dihydro-fulgide (STOBBE, BADENHAUSEN, HENNICKE, and WAHL), A., i, 381.

**δ-Diphenylene-αα-dimethyl**fulgenic acid (STOBBE, BADENHAUSEN, HENNICKE, and WAHL), A., i, 381.

**δ-Diphenylene-αα-dimethyl**fulgide (STOBBE, BADENHAUSEN, HENNICKE, and WAHL), A., i, 381.

**αα-Diphenyl-δ-diphenylenefulgenic acid** (STOBBE, BADENHAUSEN, HENNICKE, and WAHL), A., i, 381.

**α-Diphenyl-δ-diphenylenefulgide** (STOBBE, BADENHAUSEN, HENNICKE, and WAHL), A., i, 381.

**Diphenylene ketone.** See Fluorenone.

**Diphenyleneurethane.** See Carbazole-9-carboxylic acid, ethyl ester.

**Di-β-phenyldimethylammonium bromide** (v. BRAUN), A., i, 35.

**Diphenylethylene**, leuco-bases and colouring-matters from (LEMOULT), A., i, 399.

**Diphenylethylphosphine sulphide** (ARBUSOFF), A., i, 100.

**2:6-Diphenyl-1-ethylpiperidine** (SCHOLTZ), A., i, 327.

**βδ-Diphenyl-β-heptolactone**, δ-hydroxy- (KOHLER), A., i, 986.

**2:4-Diphenylcyclohexan-4-ol-6-one-1-carboxylic acid**, ethyl ester and the corresponding pyrazolone (DIECKMANN and v. FISCHER), A., i, 451.

**2:6-Diphenylcyclohexan-2-ol-4-one-1-carboxylic acid**, ethyl ester (DIECKMANN and v. FISCHER), A., i, 451.

**2:6-Diphenyl-Δ<sup>1</sup>-cyclohexen-3:4-dione-1-carboxylic acid**, ethyl ester, phenylhydrazone of (DIECKMANN), A., i, 450.

**2:6-Diphenylcyclohexen-4-one-1-carboxylic acid**, ethyl ester, isomeric forms of (DIECKMANN), A., i, 450.

**Diphenylhomophthalide** (BAUER and WÖLZ), A., i, 872.

**1:3-Diphenylhydantoin**, 2-thio- (WHEELER and BRAUTLECHT), A., i, 501.

**Diphenylhydrazine**, oxidation of (WIELAND and WECKER), A., i, 82.

**Diphenylhydroxylamine**, 4'-bromo-, 4'-chloro-, and 4'-iodo-, 4-nitroso-, and dibromo-, and di-iodo-, nitroso- (BAMBERGER and HAM), A., i, 685.

**γ-Diphenylitaconic acid**,  $\alpha$ -ethyl  $\beta$ -hydrogen ester (STOBBE), A., i, 540.

**Diphenylketen**, preparation of, and its compound with azibenzil (STAUDINGER), A., i, 650.

action of, on nitroso-compounds (STAUDINGER and JELAGIN), A., i, 215.

action of, on quinones (STAUDINGER and BEREZA), A., i, 459.

**Diphenylmethane**, preparation of, and its homologues (v. MEYER), A., i, 120.

$\alpha$ -sulphoxide, intramolecular rearrangements of (HILDITCH and SMILES), T., 145; P., 3.

*oo'*-dinitro-*pp'*-diamino- (CASSELLA & CO.), A., i, 504.

**Diphenylmethane-4:4'-dicarboxylic acid**, *di-ω*-chloro-, methyl ester (STAUDINGER, CLAR, and CZAKO), A., i, 625.

chloride (STAUDINGER and CLAR), A., i, 639.

**Diphenylmethanesulphonic acid** (WEDEKIND and SCHENK), A., i, 190.

**δ-Diphenyl- $\alpha$ -*o*-methoxyphenylfulgenic acid**, methyl ester (STOBBE and REDDELJEN), A., i, 380.

**Diphenylmethylamine**, preparation of, and its picrate (BILTZ and SEYDEL), A., i, 281.

**Diphenylmethylamine-2'-carboxylic acid**, 2:4-dinitro- (HOUBEN, ARENDT, and ETTINGER), A., i, 129.

**3:4-Diphenyl-6-methylaziminopyrazole** (MICHAELIS and RISSE), A., i, 1037.

**3:4-Diphenyl-6-methyldihydropyrazofuran** (MICHAELIS and RISSE), A., i, 1037.

**α-Diphenyl-δ-methylfulgenic acid** and its ethyl hydrogen ester (STOBBE and ROSE), A., i, 376.

**α-Diphenyl-δ-methylfulgide** (STOBBE and ROSE), A., i, 376.

**αα-Diphenyl-β-methylpropane- $\alpha\beta$ -diol** (PARRY), T., 1172; P., 141.

**1:5-Diphenyl-3-methylpyrazoleimino-3'-phenylisoxazolone** (MEYER), A., i, 687.

**3-Diphenyl-2-methyl-4-quinazolone**, 4'-amino-, 4'-amino-7-acetylaminio-, and 6-bromo-4'-amino- (BOGERT, GORTNER, and AMEND), A., i, 581.

**αδ-Diphenyl-β-methylsemicarbazide** (BUSCH and LIMPACH), A., i, 335.

**βδ-Diphenyl-α-methylsemicarbazide**, and its thiocarbonyl chloride (BUSCH and LIMPACH), A., i, 335.

**βδ-Diphenyl-α-methylthiosemicarbazide** (BUSCH and LIMPACH), A., i, 334.

**βγ-Diphenylmuconic acid**, ethyl esters of (BESCHKE, WINOGRAD-FINKEL, and KÖHRES), A., i, 874.

**Diphenyl-*m*-nitrobenzylidenebenzenylhydrazidine** (BUSCH and RUPPENTHAL), A., i, 87.

**Diphenyloxaliminochloride-pyridinium chloride** (REITZENSTEIN and BREUNING), A., i, 226.

**Diphenyloxithiophosphinic acid**, ethyl ester (ARBUSOFF), A., i, 100.

**γ-Diphenylparaconic acid**,  $\beta$ -bromo- (STOBBE), A., i, 540.

**αε-Diphenylpentan-γ-one** and its semi-carbozone (SENDERENS), A., i, 303.

**1:3-Diphenyl-5-phenoxyethylpyrazole** (v. WALTHER and LITTER), A., i, 287.

**1:4-Diphenyl-3-phenoxyethylpyrazolone**, 5-imino-, and its salts and derivatives (v. WALTHER and HERSCHEL), A., i, 237.

**2:4-Diphenyl-3-phenoxyethylpyrazolone** (v. WALTHER and HERSCHEL), A., i, 238.

**Diphenyl-*p*-phenylene disulphide** (BOURGEOIS and FOUASSIN), A., i, 964.

**Diphenyl-3-phthaloylic acid**, 4:4'-di-hydroxy-, and its calcium salt (SCHOLL and SEER), A., i, 453.

**δδ-Diphenyl- $\alpha$ -piperonylbutane-βy-carboxylic acid** and its anhydride (STOBBE, KOHLMANN, BADENHAUSEN, and KALNING), A., i, 380.

**δδ-Diphenyl- $\alpha$ -piperonylfulgenic acid** (STOBBE, KOHLMANN, BADENHAUSEN, and KALNING), A., i, 380.

**δδ-Diphenyl- $\alpha$ -piperonylfulgide** (STOBBE, KOHLMANN, BADENHAUSEN, and KALNING), A., i, 380.

**Diphenylpropionamide** (v. MEYER and NICOLAUS), A., i, 121.

**Diphenylpropylphosphine sulphide** (ARBUSOFF), A., i, 100.

**3:4-Diphenylpyrazole** (WISLICENUS and RUTHING), A., i, 304.

**2:6-Diphenyl-4-pyridone-3-carboxylic acid** (PETRENKO-KRITSCHENKO and SCHÖTTLER), A., i, 1021.

**2:3-Diphenylquinoxaline, 5-nitro-** (BORSCHE and RANTSCHEFF), A., i, 330.

**Diphenylstibine oxide** and sulphide and chloro- (MICHAELIS and GÜNTHER), A., i, 1056.

**Diphenylstibinic acid, *di-m*-nitro-** (MORGAN and MICKLETHWAIT), T., 2294; P., 274.

**Diphenylsulphamide**, 4:4'-*dibromo*, 2:4:4'-*tribromo*, and 2:4:2':4'-*tetra-nitro* (WOHL and KOCH), A., i, 37.

**δ-Diphenyl-α-styrylfulgenic acid** (STOBBE, BENARY, and SEYDEL), A., i, 380.

**δ-Diphenyl-α-styrylfulgide** and its dibromide (STOBBE, BENARY, and SEYDEL), A., i, 380.

**Diphenylsulphone**, action of bromine on (BÖESEKEN), A., i, 41.

**Diphenyl-2:6:2':6'-tetracarboxylic acid** and its derivatives (MAYER), A., i, 869.

**Diphenyl-3:4:3':4'-tetracarboxylic acid**, 6-nitro-, and its silver salt and ethyl ester (CROSSLEY and HAMPSHIRE), T., 724.

**Diphenylthiocarbamide**, *p*-*di*hydroxy- (CHEMISCHE FABRIK LADENBURG), A., i, 438.

**Diphenylthiophosphinic acid**, ethyl ester (ARBUSOFF), A., i, 100.

**Diphenylthiophosphinous acid**, esters of (ARBUSOFF), A., i, 100.

**δ-Diphenylthiosemicarbazide-α-carboxylic acid**, ethyl ester (BUSCH and LIMPACH), A., i, 690.

**2:2-Diphenyl-1-tolylidihydroisozenofuran**, and hydroxy- (GUYOT and VALLETTE), A., i, 653.

**2:4-Diphenyl-1-*p*-tolyl-2:5-dihydro-1:2:3-triazole** and the corresponding hydrotriazole (BUSCH and HEFELE), A., i, 583.

**Diphenyl-*p*-tolyl-γ-thiocarbamide** (ARNDT), A., i, 920.

**2:5-Diphenyl-1:3:4-triazole** hydrochloride (FRANZEN and KRAFT), A., i, 817.

**2:5-Diphenyl-1:3:4-triazole**, 1-amino-, salts of (FRANZEN and KRAFT), A., i, 816.

**δ-Diphenyl-α-veratrylfulgenic acid** and its sodium salt and dimethyl ester (STOBBE, KOHLMANN, and REDDELIEN), A., i, 380.

**δ-Diphenyl-α-veratrylfulgide** (STOBBE, KOHLMANN, and REDDELIEN), A., i, 380.

**2-(4')-Diphenylamino-α-naphthaquinone** (PUMMERER and BRASS), A., i, 655.

**4-Diphenyldiguanide**, 4'-amino- (COHN), A., i, 929.

**Diphorone**, compound of, with tin tetrachloride (PFEIFFER, FRIEDMANN, GOLDBERG, PROS, and SCHWARZKOPF), A., i, 791.

**Diphtaloylbenzene** (PHILIPPI), A., i, 794.

**2:3:6:7-Diphthaloylcarbazole** (SCHOLL and NEOVIUS), A., i, 567.

**2:3:6:7-Diphthaloyl-*N*-methylthiodiphenylamine** (SCHOLL, SEER, and TRITSCH), A., i, 559.

**2:3:6:7-Diphthaloylthianthren** (SCHOLL and SEER), A., i, 558.

**2:3:6:7-Diphthaloylthiodiphenylamine-thiodianthraquinonylamine** and its sulphonic acid (SCHOLL and SEER), A., i, 558.

**oo'-Dipicryldiaminodiphenyl disulphide** (KEHRMANN and STEINBERG), A., i, 1034.

**Dipiperine**, compounds of, with tin tetra-bromide and -chloride (PFEIFFER, FRIEDMANN, GOLDBERG, PROS, and SCHWARZKOPF), A., i, 792.

**Dipiperonal**, compounds of, with tin tetra-bromide and -chloride (PFEIFFER, FRIEDMANN, GOLDBERG, PROS, and SCHWARZKOPF), A., i, 791.

**αδ-Dipiperonylbutane-βγ-dicarboxylic acid** (STOBBE, VIEWEG, ECKERT, and REDDELIEN), A., i, 378.

**αδ-Dipiperonylfulgenic acid** and its potassium salt and ethyl ester (STOBBE, VIEWEG, ECKERT, and REDDELIEN), A., i, 378.

**αδ-Dipiperonylfulgide** (STOBBE, VIEWEG, ECKERT, and REDDELIEN), A., i, 378.

**1:2-Diisopropenylcyclobutane** (LEBEDEFF), A., i, 774.

**αα'-Dipropionin** (ALPERN and WEIZMANN), T., 85.

**1:3-Dipropionylindole** (ODDO and SESSA), A., i, 487.

**Di-*p*-propionylphenylcarbamide** (KUNCKELL), A., i, 990.

**α-Dipropylamino-α-phenyl-Δα-butene-γ-one** (ANDRÉ), A., i, 269.

**Dipropylammonium osmichloride** (GUTBIER and MAISCH), A., i, 19.

**telluri-bromide and -chloride** (GUTBIER, FLURY, and MICHELER), A., i, 182.

**Dipropylbarbituric acid** (MERCK), A., i, 683.

**1:2-Diisopropylcyclobutane** (LEBEDEFF), A., i, 774.

**Dipropylbutanetetracarboxylic acid**, ethyl ester (WOLFF), A., i, 690.

**2:2'-Di-*n*-propyl-1:1'-dianthraquinonyl** (SCHOLL, POTSCHEWAUSCHEG, and LENKO), A., i, 1008.

**2:2'-Di-isopropyl-1:1'-dianthraquinonyl** (SCHOLL, POTSCHEWAUSCHEG, BÖCKER, and LENKO), A., i, 1009.

**Dipropylethylenedibarbituric acid** (WOLFF), A., i, 690.

**Dipropylmalonylmalonamide** (REMFRY), T., 618.

**Dipropylmalonylbenzidine** (REMFRY), T., 622.

**Dipropylmalonyldimalonamide** (REMFRY), T., 619.

**Dipropylthiobarbituric acid** (MERCK), A., i, 683.

**Diprotocatechuic acid** (FISCHER and FREUDENBERG), A., i, 875.

**Dipyrryl and its derivatives** (ODDO and ANDO), A., i, 496.

**Dipyrrylquinoxaline** (ODDO and ANDO), A., i, 496.

**2:2-Diquinolyl salts** (KAUFMANN, STRÜBIN, ANASTACHEWITCH, POPPER, and SNAJDER), A., i, 328.

**Di- $\beta$ -resorcylic acid** (FISCHER and FREUDENBERG), A., i, 875.

**Disaccharides**, detection of small quantities of (NEUBERG and SANEVOSHI), A., ii, 1036.

**Disalicylaldehyde**, compounds of, with tin tetra-bromide and -chloride (PFEIFFER, FRIEDMANN, GOLDBERG, PROS, and SCHWARZKOPF), A., i, 791.

**Disease**, excretion of amino-acids in (MASUDA), A., ii, 631.

**Disinfectants**, chemical (DELÉPINE), A., ii, 62.

influence of temperature on (FASSON, PONDER, and WOODHEAD), A., ii, 63.

resistance of micro-organisms to (HAILER), A., ii, 1021.

**Disinfection**, theory of (HERZOG and BETZEL), A., ii, 1020.

of plants (DANESI and TOPI), A., ii, 820.

**Dispersoids**, viscosity of (HATSCHEK), A., ii, 19, 98.

**Dissociation**, See under Affinity, chemical.

**Distillation**, new flask for (DAHLE), A., ii, 975.

of liquid binary mixtures (MARILLER), A., ii, 254.

fractional, apparatus for (TICHWINSKY), A., ii, 876.

continuous fractional, in a vacuum, apparatus for (FRANCESCONI and SERNAGIOTTO), A., ii, 966.

pressure regulator for use in (WADE and MERRIMAN), T., 984; P., 64.

vacuum, receivers for (JOHN), A., ii, 876.

**Distyryl ketone semicarbazone** (KNÖPFER), A., i, 1034.

**Disulphides**, aromatic, synthesis of thiophane derivatives from (MARDEN and SMILES), T., 1353; P., 207.

formation of (BOURGEOIS and FOUASSIN), A., i, 963.

interaction of, and sulphuric acid (PREScott and SMILES), T., 640; P., 65.

**Disulphoxides**, aromatic, interaction of, with sulphuric acid (HILDITCH), T., 1091; P., 139.

**Disyringic acid** (FISCHER, FREUDENBERG, and LEPSIUS), A., i, 875.

**Dithiophthalic acid**, methyl ester (REISSERT and HOLLE), A., i, 981.

***o*-Ditolylbenzene** (GUYOT and VALLETTE), A., i, 653.

**3:6-Di-*p*-toluidino-*p*-benzoquinone-3-acetic acid** (MORNER), A., i, 57.

**3:6-Di-*o*- and *p*-toluidino-9-phenylxanthenyl chlorides** (POPE and HOWARD), T., 552.

**Ditoluquinhydrone** and its derivatives (MOIR), P., 226.

**Ditoluquinone** and its derivatives and dibromo- (MOIR), P., 226.

**2:2'-Ditolyl**, formation of six and seven-membered rings from derivatives of (KENNER and TURNER), T., 2101; P., 262.

**2:2'-Ditolyl**,  $\omega\omega'$ -dibromo, and  $\omega\omega\omega'\omega'$ -tetra-bromo- (KENNER and TURNER), T., 2108; P., 93.

**3:3'-Ditolyl**, 3-bromo-3'-nitro-4:4'-di-hydroxy-, and 5:5'-dinitro-4:4'-di-hydroxy- (MOIR), P., 227.

**Ditolylamine**, diamino-, and its diacetyl derivative (ULLMANN and SCHMID), A., i, 71.

***mp*-Ditolylamine** and its hydrochloride (SCHOLL, SEER, and TRITSCH), A., i, 559.

**1:2-Ditolyliobenzofuran** and its phenylhydrazone (GUYOT and VALLETTE), A., i, 653.

**Di-*p*-tolylbishydrazimethylene**. See Bishydrazi-*p*-tolil.

**2:2'-Ditolyl- $\omega\omega'$ -dicarboxyamide** (KENNER and TURNER), T., 2110.

**2:2'-Ditolyl- $\omega\omega'$ -dicarboxylic acid** (KENNER and TURNER), T., 2110; P., 93.

**2:2'-Ditolyl- $\omega\omega'$ -dicarboxylonitrile** (KENNER and TURNER), T., 2109; P., 263.

**1:2-Ditolyl-1:2-dihydroisobenzofuran** and 2-hydroxy- (GUYOT and VALLETTE), A., i, 653.

**3:3'-Ditolyldisulphonic acid**, 4:4'-di-hydroxy-, barium salt (MOIR), P., 227.

**Di-*p*-tolyleneephthalide** (SCHOLL and SEER), A., i, 454.

**Di-*p*-tolylmethane**, action of, with dichloromethane (LAVAUX), A., i, 533.

**9:10-*p*-Ditolyl-2-methylanthracene** (GUYOT and VALLETTE), A., i, 653.

**9:10-Ditolyl-1:2-methyldihydroanthracene**, 9:10-dihydroxy- (GUYOT and VALLETTE), A., i, 653.

**Di-*p*-tolyl methyl ether disulphide and disulphoxide (HILDITCH), A., 1100.**

**3-Ditoly-2-methyl-4-quinazolone, 4'-amino-, and 4'-amino-7-acetylamino- (BOGERT, GORTNER, and AMEND), A., i, 581.**

**Di-*o*-tolyloxaliminochloride-pyridinium chloride and platinichloride (REITZENSTEIN and BREUNING), A., i, 226.**

**Di-*p*-tolylphenylcarbinol-*O*-sulphon-methylamide (COBB and FULLER), A., i, 638.**

**Di-*p*-tolyl *p*-phenylene disulphide (BOURGEOIS and FOUASSIN), A., i, 964.**

**1:4-Di-*p*-tolylsulphonamidoanthraquinone (ULLMANN and BILLIG), A., i, 490.**

**Ditoly-*o*-tolhydrylphenylcarbinol (GUYOT and VALLETTE), A., i, 653.**

***s*-Ditriphenylmethylcarbamide (v. MEYER and FISCHER), A., i, 120.**

**Divalactone, constitution of (LOSANTSCH), A., i, 804.**

**Divaric acid (HESSE), A., i, 209.**

**Divaricatic acid and its salts and esters (HESSE), A., i, 209.**

**Divaricatinic acid, salts and ethyl ester of (HESSE), A., i, 209.**

**Divarinol and its diacetate (HESSE), A., i, 209.**

**$\alpha\delta$ -Diveratrylfulgenic acid (STOBBE and LEUNER), A., i, 378.**

**$\alpha\delta$ -Diveratrylfulgide (STOBBE and LEUNER), A., i, 378.**

**Dixanthone, compound of, with tin tetrachloride (PFEIFFER, FRIEDMANN, GOLDBERG, PROS, and SCHWARZKOPF), A., i, 791.**

**3:6-Di-*m*-xylidino-*p*-benzoquinone-3-acetic acid (MÖRNER), A., i, 57.**

**Di-*p*-xyloquinol monomethyl ether and its derivatives (BAMBERGER and BLANGHEY), A., i, 883, 884.**

**Di-*p*-xylenedipiperidinium salts (SCHOLTZ), A., i, 327.**

**Di-*o*-3-, -*m*-4-, and *p*-xylylphthalidimides (KUHARA and KOMATSU), A., i, 207.**

**Docosyl alcohol and its phenylurethane (WILLSTÄTTER, MEYER, and HÜNI), A., i, 146.**

**Dodecane,  $\alpha\mu$ -dichloro- (v. BRAUN and SOBECKI), A., i, 598.**

**Dodecylbenzamide,  $\mu$ -chloro- (v. BRAUN and SOBECKI), A., i, 598.**

**Dog, ingestion of mineral acids by the (LABBÉ and VIOILLE), A., ii, 220. analyses of the urine of the fox, coyote and (HAWK), A., ii, 308.**

**Dog-fish, acidity of the gastric juice of the (VAN HERWERDEN and RINGER), A., ii, 1109.**

**Dog-fish, digestion of protein in the (VAN SLYKE and WHITE), A., ii, 624.**

**Dolomite, origin of (LINCK), A., ii, 294. from the Simplon Tunnel (LINCIO), A., ii, 1101.**

**Double linking, influence of, on optical activity (FRANKLAND and O'SULLIVAN), T., 2325; P., 319.**

**Drying agents, relative efficiency of calcium and zinc bromides and zinc chloride (BAXTER and WARREN), A., ii, 268.**

**Drying-apparatus (MCINTIRE), A., ii, 329.**

**Drugs, diuretic power of (ZANDA), A., ii, 1017. action of, on the cerebral blood vessels (DIXON and HALLIBURTON), A., ii, 52. effect of, on the chorda tympani nerve (DALE and LAIDLAW), A., ii, 997. effect of, on muscle and nerve (WALLER), A., ii, 138. action of, on the bronchial muscles (JANUSCHKE and POLLAK), A., ii, 1120. action of, on respiration (v. ISSEKUTZ), A., ii, 1017. pyro-analyses of (ROSENTHALER), A., ii, 948.**

**Dundathic acid (BAKER and SMITH), A., i, 479.**

**Dundatholic acid (BAKER and SMITH), A., i, 479.**

**Dust explosions, lecture experiment to illustrate (LANG and LLOYD), P., 161.**

**Dyeing, theory of (DREAPER), T., 2094; P., 244. experiments in (SAPOSHNIKOFF), A., ii, 1070. cohesion as a factor in (ROSENSTIEHL), A., ii, 99, 372.**

**Dyes. See Colouring-matters.**

**Dynamic isomerism (BRITISH ASSOCIATION REPORTS), A., ii, 786.**

**Dyspnea and respiration (HOUGH), A., ii, 993.**

**Dysprosium bromate, carbonates, chromate, platinocyanide, phosphate, and selenate (JANTSCH and OHL), A., ii, 492.**

**E.**

**Earth, distribution of elements in the crust of the (VERNADZKY, LINDENER, and REVUTSKY), A., ii, 1042. radiation of the, at different altitudes (MCLENNAN and MACALLUM), A., ii, 960.**

**Earths, rare**, refraction of solutions of the (ELIAS), A., ii, 81.  
 compounds of (PRATT and JAMES), A., ii, 892.  
 compounds of metallic salts of the, with hexamethylenetetramine (BARBIERI and CALZOLARI), A., i, 268.  
 complex molybdates of (BARBIERI), A., ii, 291.  
 double nitrates of the (JANTSCH and WIGDOROW), A., ii, 114.  
 analysis of minerals of the, by means of sulphur monochloride (HICKS), A., ii, 934.  
 stearate separation of the (STODDART and HILL), A., ii, 727.

**Eggs**, dextrose in (DIAMARE), A., ii, 129.  
 heat production in the oxidative processes of (MEYERHOF), A., ii, 1004.  
 biology of (DIAMARE), A., ii, 1110.  
 lipoids of the yolk of (SERONO and PALOZZI), A., ii, 1005.  
 hen's, chemistry of (KOJO), A., ii, 1110.  
 presence of dextrose and creatinine in (SALKOWSKI), A., ii, 626.  
 sea-urchin's, oxidation and cytolysis of (LOEB and WASTENEYS), A., ii, 304.  
 catalase of (AMBERG and WINTER-NITZ), A., ii, 1110.  
 oxidative processes in (LOEB and WASTENEYS), A., ii, 1110.  
 poisonous action of sodium chloride on (WARBURG), A., ii, 60.  
 respiration of, in sodium chloride solution (MEYERHOF), A., ii, 738.  
 unfertilised, action of calcium and sodium salts on (LILLIE), A., ii, 128.

**Egg-white**, relation between digestibility of, and its coagulation temperature (FRANK), A., i, 698.

**Eglestonite** from California (ROGERS), A., ii, 807.

**Eichbergite** (GROSSPIETSCH), A., ii, 807.

**Elaidin reaction**, the (FOKIN), A., i, 5.

**Elaidone** and its oxime (EASTERFIELD and TAYLOR), T., 2306; P., 279.

**Elaidyl chloride**, *di*-iodo- (ABDERHALDEN, HIRSCH, and GUGGENHEIM), A., i, 954.

**Elaidylalanine**, *di*-iodo- (ABDERHALDEN, HIRSCH, and GUGGENHEIM), A., i, 955.

**Elaidylglycine**, *di*-iodo-, and its ethyl ester (ABDERHALDEN, HIRSCH, and GUGGENHEIM), A., i, 955.

**Elaidyl-*di*-iodotyrosine**, *di*-iodo- (ABDERHALDEN, HIRSCH, and GUGGENHEIM), A., i, 955.

**Elasticity**, relation between, and specific heat of solids with monatomic molecules (EINSTEIN), A., ii, 186.

**Elastin**, action of pepsin on (ABDERHALDEN and WACHSMUTH : ABDERHALDEN and STRAUCH), A., i, 511. use of, in detection of proteolytic enzymes (ABDERHALDEN and MEYER : ABDERHALDEN and KIESEWETTER), A., ii, 999.

**Electrical double refraction**. See under Photochemistry.

**ELECTROCHEMISTRY** :—

**Electrochemistry** of solutions in acetone (ROSHDESTWENSKY and LEWIS), T., 2138; P., 266.

**Electricity**, carriers of, in gases (BECKER), A., ii, 957.

**Accumulator**, lead, rapid formation of plates in (SCHLEICHER), A., ii, 848.

**Cell**, mercury, mercurous chloride, lead-chloride, lead, thermodynamics of the (LUTHER), A., ii, 577.

Clark, in relation to zinc amalgams (COHEN and VAN GINNEKEN), A., ii, 14.

**Cells**, concentration, containing the same salt in two different solvents, temperature-coefficient of (LAURIE), A., ii, 576. with electrodes reversible to chlorine ions (LAPWORTH and PARTINGTON), T., 1417; P., 194.

galvanic, rate of discharge of (REICHINSTEIN), A., ii, 249. with carbon anodes (BECHTEREFF), A., ii, 1054.

gas, yielding an appreciable current (BEUTNER), A., ii, 249.

standard (VAN GINNEKEN and KRUYT), A., ii, 962.

thermodynamics of (COHEN), A., ii, 180.

mercurous sulphate as a depolariser in (VAN GINNEKEN), A., ii, 179; (HULETT), A., ii, 848.

valve, influence of electrolytes on the voltage of (SCHULZE), A., ii, 365, 790.

**Coulometer**, silver, use of silver fluoride in the (EISENREICH and FOERSTER), A., ii, 461.

**Dielectric cohesion** of gases of the argon group (BOUTY), A., ii, 458.

**Dielectric constants** of liquid hydrides (PALMER and SCHLUNDT), A., ii, 458.

of organic compounds (DOBROSERDOFF), A., ii, 458.

**Electrical conduction**, application of the electron theory to (v. MARTIN), A., ii, 177.

## ELECTROCHEMISTRY :—

**Electrical conductivity**, influence of pressure on, of electrolytes (SCHMIDT), A., ii, 12. and ionisation of electrolytes in aqueous solution (WEST and JONES), A., ii, 10. of metals, changes in the, on liquefaction (WAGNER), A., ii, 177. of salts and mixtures of salts (BEN-RATH and WAINOFF), A., ii, 847. of solutions, influence of temperature and pressure on (LUSSANA), A., ii, 462; (KÖRBER), A., ii, 863. in acetic and propionic acids (SACHANOFF), A., ii, 689, 691. in esters with small dielectric constants (SACHANOFF), A., ii, 247. and viscosity in mixed solvents containing glycerol (GUY and JONES), A., ii, 863.

**Electrical induction** in chemical reactions (WINSTON), A., ii, 692.

**Electrical double refraction** of liquids (LIPPmann), A., ii, 184.

**Electric arc**, reactions of substances in the (SALMON), A., ii, 15; (SABATTIER), A., ii, 91. flame from the, in pure nitrogen (STRUTT), A., ii, 1056.

**Electric discharge**, chemical action of, in electrolytic gas (KIRKBY), A., ii, 462. in the vapours of alkali metals (GEHLHOFF), A., ii, 349. in rubidium and caesium vapours, electrical and optical measurements in the. (GEHLHOFF), A., ii, 82.

**Electric furnace**, vacuum (GOECKE), A., ii, 1053.

**Spark-gap**, influence of the metal of the, on the frequency of electrical vibrations (ROSCHANSKY), A., ii, 15.

**Electrification**, by contact (HESEHUS), A., ii, 13.

positive, due to heating aluminium phosphate (HORTON), A., ii, 90.

**Electrode**, aminonium (SLADE), T., 1974; P., 242. potential of the chlorine (LEWIS and RUPERT), A., ii, 364. potentials in the manufacture of chlorine and alkali (SACERDOTI), A., ii, 789.  $\text{Cu} \mid \text{Cu}_2\text{O}$  alkali  $\mid \text{H}_2$ , potential of the (ALLMAND), T., 840; P., 69.  $\text{Hg} \mid \text{HgO}$  alkali, potential of the (DONNAN and ALLMAND), T., 845; P., 70.

## ELECTROCHEMISTRY :—

**Electrode**, hydrogen, in alcohol (HARDMAN and LAPWORTH), T., 2242; P., 244. potential measurements with the, in liquids containing carbon dioxide (HASSELBALCH), A., ii, 182. of the third type for measurement of the potential of the thallium ion (SPENCER), A., ii, 364.

**Electrodes**, changes in concentration at the, in electrolysis (ROSEBRUGH and MILLER), A., ii, 181.

**Anode**, copper, behaviour of the, in electrolysis of hydrochloric acid (DUSHMAN), A., ii, 181. iron, passivity of the (SCHOCH and RANDOLPH), A., ii, 14. nickel, passivity of the (SCHOCH and RANDOLPH), A., ii, 14. velocity of solution of the, in sulphuric acid (RUSSO), A., ii, 181.

**Anodes**, carbon, in galvanic cells (BECHTEREFF), A., ii, 1054.

**Cathode** potential fall in gases (ROTTGARDT), A., ii, 178.

**Electrolytes**, conductivity and ionisation of, in aqueous solution (WEST and JONES), A., ii, 10; (HOSFORD and JONES), A., ii, 960; (WINTON and JONES), A., ii, 961. potential differences between a metal and (GUYOT), A., ii, 1053. influence of pressure on the conductivity of (SCHMIDT), A., ii, 12. electrolytic valve action in (SCHULZE), A., ii, 365. electrodes with alkaline (ALLMAND), T., 840; P., 69; (DONNAN and ALLMAND), T., 845; P., 70. diffusion in solutions of (VANZETTI; GIRARD), A., ii, 860. diffusion of, in colloids (ROLLA), A., ii, 969. solubility of, in aqueous solutions (MASSON), T., 1132; P., 125, 328. boiling of, on passage of an electric current (CEGIELSKIJ), A., ii, 463. dissociation of, in non-aqueous solvents (KREIDER and JONES), A., ii, 362. amphoteric, dissociation of (MICHAELIS), A., ii, 577. solid, polarisation of (HABER and ZAWADZKI), A., ii, 1053. ternary, dissociation of (JELLINEK), A., ii, 362. weak, the dilution law applied to (SUTHERLAND), A., ii, 703.

## ELECTROCHEMISTRY:—

**Electrolytes**, adsorption of, by soils (OSTWALD), A., ii, 374.  
 ionisation and hydration of, in aqueous solution at 0° (WASHBURN and MACINNES), A., ii, 1076.  
 estimation of the degree of ionisation of (WASHBURN), A., ii, 862.  
**Electrolytic dissociation**, theory of (KJELLIN), A., ii, 248; (BJERUM), A., ii, 377.  
 relation of molecular association to (TURNER), T., 880; P., 40.  
 and enzyme action (ROHONYI), A., i, 758.  
 and solution pressure (KRUGER), A., ii, 789.  
**Electrolytic reduction** of aromatic aldehydes (LAW), T., 1113; P., 138.  
 of benzylidene bases (LAW), P., 310.  
**Electrolytic saturation current**, production of an (JAFFÉ), A., ii, 962.  
**Electrosyntheses** (LOSANITSCH), A., i, 177.  
**Electromotive force**, measurement of, in alcohol (LAPWORTH and PARTINGTON), T., 1417; P., 194; (HARDMAN and LAPWORTH), T., 2242; P., 244.  
 calculation of, from thermal effects (POLLITZER; COHEN), A., ii, 180.  
 thermo-dynamic calculation of (HALLA), A., ii, 364.  
 produced by centrifugal action (TOLMAN), A., ii, 248.  
 of the voltaic couple (GUGLIELMO), A., ii, 179.  
**Electron** conception of valency (FALK and NELSON), A., ii, 104.  
**Electrons**, number of, in the atom (WILSON), A., ii, 593.  
 number of, concerned in metallic conduction (NICHOLSON), A., ii, 836.  
 heat liberated during the absorption of, by metals (RICHARDSON and COOKE), A., ii, 358.  
 velocity of emission of, by metals (HABER and JUST), A., ii, 954.  
 velocity of emission of, by metals in ultra-violet light (HUGHES, KOVARIK and ZAKRZEWSKI), A., ii, 572.  
 negative, emission of, by alkali metals (FREDENHAGEN), A., ii, 571.  
**Ionisation** of atmospheric air (EVE), A., ii, 89.  
 produced by  $\beta$ -particles (GEIGER and KOVARIK), A., ii, 954.

## ELECTROCHEMISTRY:—

**Ionisation** produced by splashing and in chemical reactions (BLOCH), A., ii, 176, 357.  
 and chemical action (BLOCH), A., ii, 456.  
 relation between adsorption and (OSTWALD), A., ii, 1068.  
 correlation of, with chemical structure by means of polarity (DERICK), A., ii, 713.  
 of electrolytes (WASHBURN and MACINNES), A., ii, 1076.  
 and conductivity of electrolytes in aqueous solution (WEST and JONES), A., ii, 10; (HOSFORD and JONES), A., ii, 960; (WINSTON and JONES), A., ii, 961.  
 of gases (TOWNSEND) A., ii, 355; (FRANCK and WESTPHAL), A., ii, 957.  
 effect of temperature on the (CLO), A., ii, 355.  
 by  $\alpha$ -rays (MOULIN), A., ii, 171.  
 by canal rays (SEELIGER), A., ii, 958.  
 by chemical change (BAKER), A., ii, 244.  
 by Rontgen rays (BEATTY), A., ii, 245.  
 by light (CANNEGIETER), A., ii, 455.  
 by ultra-violet light (SACHS), A., ii, 246.  
 by the  $\alpha$ -particles from polonium (TAYLOR), A., ii, 354.  
 in presence of non-radioactive substances (DE BROGLIE and BRIZARD), A., ii, 837.  
 relation of valency to (MILLIKAN and FLETCHER), A., ii, 573.  
 of liquid hydrocarbons (BIALOB-JESKI), A., ii, 837.  
 in non-aqueous solvents (DAWSON and LESLIE), T., 1601; P., 208.  
 of the vapour of salts in a flame (MOREAU), A., ii, 455, 686.  
 estimation of the degree of, of electrolytes (WASHBURN), A., ii, 862.  
**Ion**, isolation of an, and measurement of its charge (MILLIKAN), A., ii, 175.  
 measurement of the charge on an, and its relation to valency (MILLIKAN and FLETCHER), A., ii, 573.  
**Ions**, production of, in chemical reactions (REBOUL), A., ii, 692.  
 charges on, in gases (TOWNSEND), A., ii, 686.

**ELECTROCHEMISTRY :—**

**Ions**, mobility of, in gases (REIN-GANUM), A., ii, 788, 837.  
 action of, on the heart and on colloids (MINES), A., ii, 130.  
 effect of, transported by the current, on the primary affinity for colours and the conductivity of polarised nerves (SCHWARTZ), A., ii, 306.  
 gaseous, the mass of (DUANE), A., ii, 839.  
 dissymmetry of positive and negative, relatively to the condensation of water vapour (BESSON), A., ii, 839.  
 positive, emitted by salts of the alkali metals (RICHARDSON), A., ii, 9, 10.  
 formation of, by heated metals (KLEMENSIEWICZ), A., ii, 1050.  
 emission of, from heated salts (RICHARDSON), A., ii, 1051.  
 mobility of, from heated aluminium phosphate (TODD), A., ii, 1050.  
 discharge of, from heated sodium phosphate (HORTON), A., ii, 246.  
 mobility of, in gases (TODD), A., ii, 245.  
 flame, mobility of (LUSBY), A., ii, 245.  
 radioactive, mobility of (FRANCK and MEITNER), A., ii, 958.  
 tervalent, action of, on the frog's heart (MINES), A., ii, 633.

**Ionic theory**, objections to the (URBAIN), A., ii, 861.

**Polarity** of elements and radicles (DERICK), A., ii, 712, 713.

**Potential** of hyposulphite reactions (JELLINEK), A., ii, 365.

**Potentials**, liquid, elimination of, in potential measurements (BJERRUM and BJERRUM), A., ii, 692.

**Potential difference** at the contact of two electrolytes (BJERRUM), A., ii, 182.

**Thermoelectric forces** in the transition from solid to liquid (CERMAK and SCHMIDT), A., ii, 1055.

properties of various inorganic substances (KOENIGSBERGER and WEISS), A., ii, 578.

**Transport numbers**, relation between, and molecular complexity (MAZZUCHELLI), A., ii, 962.

**Voltaic couple**, electromotive force of the (GUGLIELMO), A., ii, 179.

**Voltmeter**, copper, effect of sucrose on the accuracy of the (DEDE), A., ii, 461.

**ELECTROCHEMISTRY :—**

**Voltmeter** with mercurous perchlorate (MATHERS and GERMANN), A., ii, 577.  
 water, migration of ions in the (STREINTZ), A., ii, 15.

**Electrolytes**. See under Electrochemistry.

**Electromotive force**. See under Electrochemistry.

**Electron**. See under Electrochemistry.

**Elements**, distribution of, in the earth's crust (VERNADSKY, LINDENER, and REVUTSKY), A., ii, 1042.

classification of the (CACERES), A., ii, 593.

dominant, atomic weights of (HINRICH), A., ii, 1080.

arrangement of, in a spiral (EMERSON), A., ii, 198.

tabular grouping of the (v. STACKELBERG), A., ii, 708.

fundamental properties of the (RICHARDS), T., 1201; P., 178.

atomic heats of the (KOENIGSBERGER), A., ii, 580.

specific gravities of, in relation to the periodic system (HOPKINS), A., ii, 698.

of the fourth group, cryoscopic measurements of (FALCIOLA), A., ii, 370.

**Emetine**, and its salts and derivatives (KELLER), A., i, 104.

**Emodic acid** and its triacetyl derivative (FISCHER and GROSS), A., i, 886.

**Emodin** and its tribenzoyl derivative (TUTIN and CLEWER), T., 953; P., 89.

monomethyl ether and its dibenzoyl derivative (TUTIN and CLEWER), T., 952; P., 89.

**Emodin**, tetranitro-, and its compound with aniline (OESTERLE and SYPKENS-TOXOPÉUS), A., i, 888.

*iso***Emodin** and its acetyl derivative (TSCHIRCH and BROMBERGER), A., ii, 528.

**Emodinglycolic acid**, salts and derivatives of (OESTERLE and SYPKENS-TOXOPÉUS), A., i, 888.

**Emplectite** (PRIWOZNIK), A., ii, 991.

**Emulsin**, action of heat on (BERTRAND and COMPTON), A., i, 592.

hydrolysis of amygdalin by (ROSENTHALER), A., i, 99.

action of, on alcoholic gentiopicroin (BOURQUELOT and BRIDEL), A., i, 1053.

**Emulsions**, olive oil-water (WEIGNER), A., ii, 194.

oil-water, stability of (HATSCHEK), A., ii, 1068.

**Emulsions**, applicability of the gas laws to (ILYIN), A., ii, 861.  
 viscosity of (BANCELIN), A., ii, 586.

**Endotin**, chemistry of (LOCKEMANN), A., ii, 916.

**Energy**, theory of photosynthetic transformation of (TSVETNIK), A., ii, 451.  
 influence of intake of food on the production of (GIGON), A., ii, 741.  
 changes in sleeping children (HOWLAND), A., ii, 1005.

**Enzyme**, Bulgarian, action of, on proteins (BERTRAND), A., ii, 140.  
 action of the, on proteins and amino-compounds (EFFRONT), A., ii, 61, 319.  
 action of the, on monobasic acids (BERTRAND and VEILLON), A., ii, 221.  
 lipolytic, in sweet almonds (TONGUTTI), A., ii, 525.  
 producing acetaldehyde in bitter wines (VOISENET), A., ii, 915.  
 uricoclastic (GALEOTTI), A., ii, 131.

**Enzymes**, chemical composition and formation of (V. EULER and KULLBERG), A., ii, 320.  
 nomenclature of (V. EULER), A., i, 1051.  
 action of ultra-violet light on (CHAUDARD and MAZOUÉ), A., i, 758.  
 determination of the number of, in a liquid (ACHALME and BRESSON), A., i, 172.  
 influence of temperature on (GRAMENITZKI), A., i, 98.  
 influence of viscosity on the activity of diastatic (ACHALME and BRESSON), A., i, 591; (ACHALME), A., i, 592.  
 inactivation of (PORTER), A., i, 98.  
 synthesis of fats by (DUNLAP and GILBERT), A., i, 1054.  
 decomposition of hydrogen peroxide by (WAENIG and STECHE), A., i, 759.  
 cleavage of nucleins by (AMBERG and JONES), A., i, 823.  
 cleavage of nucleic acids by (AMBERG and JONES), A., i, 824.  
 hydrolysis of trioses and stachyose by (BIERRY), A., i, 354.  
 influence of, on the respiration of plants (LWOFF), A., ii, 641.  
 reactions between, and anti-enzymes (JACOBY), A., i, 935.  
 of the alimentary canal, action of, on gelatin (MINAMI), A., ii, 810.  
 of blood, influence of poisons on (DUNCKER and JODLBAUER), A., ii, 756.  
 of the brain (WROBLEWSKI), A., ii, 627.

**Enzymes**, digestive, from *Coleoptera* (BOOUNOURE), A., ii, 214.  
 hepatic, influence of fats on the activity of (CHOAY), A., ii, 747.  
 of intestinal juice (LONDON and KRYM), A., ii, 1000.  
 of leucocytes (TSCHERNORUZKI), A., ii, 1108.  
 peptolytic, in the gastric juice (KUTTNER and PULVERMACHER), A., ii, 513.  
 of gastric contents in cancer (HALL and WILLIAMSON), A., ii, 310.  
 in parasitic worms (ABDERHALDEN), A., ii, 1009.  
 proteoclastic, study of (KOBER; FERNBACH and SCHOEN), A., i, 824.  
 of invertebrates (SELLIER), A., ii, 1113.  
 detection of, by means of elastin (ABDERHALDEN and KIESEWETTER), A., ii, 999.  
 reduction (BACH), A., i, 412, 759.  
 respiration, of plants (ZALESKI), A., ii, 323.  
 of yeast, activity of (EULER and KULLBERG), A., ii, 817.

**Enzymes**. See also:—

- Antipepsin.
- Antiprotease.
- Antithrombin.
- Carboxylase.
- Catalase.
- Cellase.
- Chlorophyllase.
- Diastase.
- Emulsin.
- Ereptase.
- Inulinase.
- Invertase.
- Lipase.
- Maltase.
- Nuclease.
- Nucleinases.
- Nucleosidases.
- Nucleotidases.
- Pepsin.
- Perhydridase.
- Phenolase.
- Phosphatese.
- Phytase.
- Protease.
- Rennin.
- Secretin.
- Trypsin.
- Zymase.

**Enzyme action** (LOEW: WELTER), A., i, 409.  
 laws of (GRÜTZNER and WALDSCHMIDT), A., i, 697.  
 synthetical (VAN 'T HOFF), A., i, 99.

**Enzyme action** and electrolytic dissociation (ROHONYI), A., i, 758.  
and radioactivity (v. KÖRÖSY), A., ii, 9.  
influence of the thyroid on (JUSCHTSCHENKO), A., ii, 1112.

**Ephedrine** (RABE), A., i, 396; (SCHMIDT), A., i, 562; (SCHMIDT and CALLIESS), A., i, 742.  
derivatives of (CALLIESS), A., i, 76.

**ψ-Ephedrine** (RABE), A., i, 396; (SCHMIDT and CALLIESS), A., i, 742.

**Epicamphor** and its derivatives (LANK-SHEAR and PERKIN), P., 166.

**Epididymis**, neutralisation of spermatoxins and alkaloids by extracts of (METALNIKOFF), A., ii, 217.

**Epimerism** (VOTOCÉK), A., i, 179.

**Epinephrine.** See Adrenaline.

**EQUILIBRIUM** :—

- Phase rule**, simple demonstration of (PARTINGTON), P., 13.
- application of, to mixed crystals in binary systems (PRINS), A., ii, 196.
- application of, to colloidal systems (JONKER), A., ii, 103.
- application of, to disperse systems (PAWLOFF), A., ii, 27.
- application of, to mineral associations (GOLDSCHMIDT), A., ii, 991.
- and the formulae of eutectic mixtures (GORBOFF), A., ii, 264.
- application of, to the recognition of racemic compounds (LADENBURG), A., ii, 265, 707.
- application of, to stereoisomeric compounds (VAN DER LINDEN), A., ii, 477.
- Phases**, a distribution of a substance between two (KRULLA), A., ii, 476.
- osmotic equilibrium between two fluid (GAY), A., ii, 260, 850.
- Equilibria**, heterogeneous (JABŁCZYŃSKI and JABŁONSKI), A., ii, 27.
- Equilibrium** in a dissociating gas (STAFFORD and v. WARTENBERG), A., ii, 700.
- in a mixed binary system (VOLCHONSKY), A., ii, 25.
- with solid phases (SMITS), A., ii, 379.
- heterogeneous, in dissociating compounds (SCHEFFER), A., ii, 379; (BRINER), A., ii, 705.
- chemical. See under **Affinity, chemical**.
- Erepsin** in parasitic fungi (REED and STAHL), A., ii, 916.
- Ereptase** of intestinal juice (AMANTEA), A., ii, 1000.

**Ergot**, new active base from (KUTSCHER), A., ii, 59; (ENGELAND and KUTSCHER), A., ii, 220.

**Ergothioneine**, constitution of (BARGER and EWINS), T., 2336; P., 305.

**Ericaceæ**, detection of andromedotoxin in (TUNMANN), A., ii, 1023.

**Erucic acid**, ammonium salt (FALCIOLA), A., i, 175.

**Erucyl alcohol** and its dibromide (WILLSTÄTTER, MEYER, and HÜNI), A., i, 146.

**Erythroapocyanine** and its nitrate (KAUFMANN, STRÜBIN, ANASTACHEWITCH, POPPER, and SZNAJDER), A., i, 328.

**Eschscholtzia Californica**, alkaloid from (BRINDEJONC), A., i, 222.

**Essential oils.** See **Oils, vegetable**.

**Ester**,  $C_{14}H_{16}O_8$ , product from the preparation of ethyl phloroglucinol-dicarboxylate (LEUCHS and SIMION), A., i, 646.

$C_{15}H_{21}O_6N$ , from ethyl camphorylidene-cyanoacetate and hydrogen peroxide (FORSTER and WITHERS), P., 327.

$C_{16}H_{25}O_2$ , from linalyl bromide and ethyl sodioacetacetate, and its derivatives (ROURE-BERTRAND FILS, DUPONT, and LABAUNE), A., i, 896.

$C_{17}H_{20}O_{10}$ , product from the preparation of ethyl phloroglucinoldicarboxylate, and its derivatives (LEUCHS and SIMION), A., i, 646.

$C_{17}H_{28}O_4$ , from linalyl bromide and ethyl sodiomalonate (ROURE-BERTRAND FILS, DUPONT, and LABAUNE), A., i, 895.

**Esters** with small dielectric constants, electrical conductivity of solutions in (SACHANOFF), A., ii, 247.

catalytic scission of, by metallic oxides (SABATIER and MAILHE), A., i, 348.

scission of, in blood (RONA), A., ii, 740.

action of, on the sodium derivative of phenylacetonitrile (BODROUX), A., i, 129.

hydrolysis of, by blood and serum (RONA and MICHAELIS), A., ii, 302.

hydrolysis of, in tissues (RONA), A., ii, 627.

mono-substituted, of the malonic and acetoacetic series, preparation of (LEUCHS), A., i, 602.

**Ester acids**, interchange of alkyl groups in (KOMNENOS), A., i, 260.

**Esterification** (REID), A., ii, 477.

by catalysis (SABATIER and MAILHE), A., i, 258, 416.

by Fischer's method (PRIBRAM), A., ii, 623.

**Ethane**, *s-tetrachloro*-, pyrogenic decomposition of (NICODEMUS), A., i, 345.

**Ethane**, *α-fluoro-αββ-tetrabromo*-, *αα-difluoro-αββ-tetrabromo*-, *αα-difluoro-αββ-tetrabromo*-, and *ααβ-trifluoro-β-bromo*- (SWARTS), A., i, 763.

*nitro*-, sodium derivative, action of phenylcarbimide on (STEINKOPF and DAEGE), A., i, 280.

**Ethanesulphonic acid**, yttrium salt (PRATT and JAMES), A., ii, 893.

**Ethenylcyclohexene** (LEBEDEFF), A., i, 26.

**Ether**,  $C_9H_{16}O_3Cl_3$  from *ααγδδ-hexachloro-Δβ-butylene* and sodium ethoxide (NICODEMUS), A., i, 346.

**Ether**. See Ethyl ether.

**Ethers**, constitution of compounds of bromine with (TSCHELINZEFF), A., i, 415.

basic properties of the oxygen of (TSAKALOTOS), A., i, 514.

formation of oxonium dibromides of (TSCHELINZEFF and KONOWALOFF), A., i, 256.

action of, with benzophenone (PATRÓN and CHIEFFI), A., i, 65.

**Ethereal oils**. See Oils, vegetable.

**Ethoxyacetic acid**, menthol derivative of (EINHORN), A., i, 137.

chloro-, ethyl ester, formation of (BLAISE and PICARD), A., i, 349.

**5-Ethoxyanthranilic acid** (LESSER), A., i, 456.

*1-p-Ethoxybenzeneazo-2-chloronaphthalene* (CHARRIER and FERRARI), A., i, 1046.

*o- and p-Ethoxybenzeneazo-β-naphthol* (CHARRIER and FERRARI), A., i, 1046.

**Ethoxybenzimidazolone**, diacetyl derivative (ELBS, METTE, and SCHUSTER), A., i, 193.

**p-Ethoxybenzoyl cyanide** (VORLÄNDER, FRIEDBERG, VAN DER MERVE, ROSENTHAL, HUTH, and v. BODECKER), A., i, 866.

**6-Ethoxy-3-benzyl-α-pyrone-5-carboxylic acid**, ethyl ester (THOLE and THORPE), T., 2201.

*α-Ethoxysobutyric acid* (BLAISE and PICARD), A., i, 260.

*α- and β-o-Ethoxycinnamamide* (STOERMER, FRIDERICI, BRÄUTIGAM, and NECKEL), A., i, 296.

**Ethoxycinnamic acid**, ethylenechlorohydrin ester (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 858.

*γ-Ethoxy-αα-dimethylacetooacetic acid*, ethyl ester, and its derivatives (SOMMELET), A., i, 109.

**Ethoxydimethylaminophenyl sulphide**, ammonium sulphonate of (PRESKOTT and SMILES), T., 646.

**3-Ethoxydiphenyl-2-methyl-4-quinazolone**, 4'-amino-, and 4'-amino-7-acetyl-amino- (BOGERT, GORTNER, and AMEND), A., i, 581.

**p-Ethoxydiphenylphthalide** (MEYER and FISCHER), A., i, 723.

**2'-Ethoxydiphenylsulphone** disulphide (FRIES and VOGT), A., i, 556.

**2'-Ethoxydiphenylsulphone-2-sulphinic acid** and its sodium salt (FRIES and VOGT), A., i, 556.

**2'-Ethoxydiphenylsulphone-2-sulphonic acid** and its anilide (FRIES and VOGT), A., i, 557.

**2'-Ethoxydiphenylsulphone-2-sulphonyl bromides** and chloride (FRIES and VOGT), A., i, 556.

**γ-Ethoxy-α-ethylacetooacetic acid**, ethyl ester, and its pyrazolone derivative (SOMMELET), A., i, 109.

**α-Ethoxy-α-ethylbutyric acid** (BLAISE and PICARD), A., i, 260.

**γ-Ethoxyheptane** (BLAISE and PICARD), A., i, 260.

**α-Ethoxyhexoyl chloride** (BLAISE and PICARD), A., i, 260.

**4-Ethoxylactanilide** (*lactophenin*), 2-nitro-, and 2:6-dinitro-, and nitrate of the latter (ELBS and METTE), A., i, 192.

**γ-Ethoxy-α-methylacetooacetic acid**, ethyl ester, and its pyrazolone derivative (SOMMELET), A., i, 109.

**ε-Ethoxy-β-methyl-Δβ-amylen** (KIJNER and KLAWIKORDOFF), A., i, 636.

**ω-Ethoxymethylfurfuraldehyde** and its phenylhydrazone and *p*-bromophenylhydrazone (COOPER and NUTTALL), T., 1197; P., 134.

**4(or 5)-Ethoxymethylglyoxaline** and its hydrogen oxalate (PYMAN), T., 678.

**Ethoxymethyl isopropyl ketone** and its semicarbazone (SOMMELET), A., i, 109.

**ω-Ethoxymethylpyromucic acid** and its silver salt (COOPER and NUTTALL), T., 1198.

**2-Ethoxy-1-naphthaldehyde**, derivatives of (SACHS and BRIGL), A., i, 719.

**2-Ethoxy-1-naphthylhydroxyacetonitrile** (SACHS and BRIGL), A., i, 719.

**Ethoxyphenylaceanthrenaphenazonium chloride** (LIEBERMANN and ZSUFFA), A., i, 387.

**Ethoxyphenylacenaphthaphenazonium chloride** (LIEBERMANN and ZSUFFA), A., i, 387.

**η-Ethoxy-α-phenyl-η-p-anisyl-Δαγ-heptadien-ε-one**, *β*-bromo- (BAUER and DIETERLE), A., i, 881.

**p-Ethoxyphenylcarbamic acid**, trichloroisopropyl ester (VEREINIGTE CHININFABRIKEN ZIMMER & Co.), A., i, 118.

**p-Ethoxyphenylethyl alcohol** (AKTIENGESELLSCHAFT FÜR ANILIN-FABRIKATION), A., i, 857.

**o-Ethoxyphenylethylamine** (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 629.

**m-Ethoxyphenylethylamine hydrochloride** (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 629.

**m-Ethoxyphenylethyldimethylamine** (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 629.

**m-Ethoxyphenylethyltrimethylammonium chloride** and methiodide (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 629.

**p-Ethoxyphenylglyoxylic acid** and its derivatives (VORLÄNDER, FRIEDBERG, VAN DER MERVE, ROSENTHAL, HUTH, and v. BODECKER), A., i, 866.

**α-Ethoxyphenylhydrocumaric acid**, β-bromo- (STOERMER and FRIEMEL), A., i, 633.

**6-Ethoxy-1-phenyl-2-methylbenzimidazole**, 4:7-dinitro- (MELDOLA and KUNTZEN), T., 1294.

**p-Ethoxyphenylphthalide** (MEYER and FISCHER), A., i, 723.

**β-Ethoxy-β-phenylpropionic acid** and its methyl ester (SCHRAUTH, SCHOELLER, and STRUENSEE), A., i, 642.

**m-Ethoxy-β-phenylpropionic acid** and its sodium salt (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 865.

**β-Ethoxypropionic acid**, ethyl ester (PALOMAA and KILPI), A., i, 176.

**2-Ethoxystilbene**, 4'-hydroxy- (STOERMER and FRIEMEL), A., i, 633.

**3-Ethoxy-2:2:5:5-tetramethyl-2:5-dihydrofuran** (DUPONT), A., i, 554.

**2'-Ethoxy-2-thioldiphenylsulphone** and its methyl ether (FRIES and VOGT), A., i, 556.

**Ethoxythioxanthone**, chloro- (MARDSEN and SMILES), T., 1356.

**p-Ethoxy-m-toluenesulphonic acid** and its metallic salts (ROBERTS and ALLEMAN), A., i, 369.

**5-Ethoxy-1:3:7-trimethylisouric acid** (BILTZ), A., i, 168.

**α-(or β-) Ethoxy-β-1:2-triphenyl-3-ethyl-hydrazimethylene** (RASSOW and BURMEISTER), A., i, 820.

**Ethyl alcohol**, refraction and dispersion by (MERCZING), A., ii, 574.

absolute, specific gravity of (KAILAN), A., i, 939.

and acetaldehyde, the system (DE LEEUW), A., ii, 870.

**Ethyl alcohol**, acetic acid, ethyl acetate and water, equilibrium between, and the influence of hydrochloric acid on the system (JONES and LAPWORTH), T., 1427; P., 143.

ethyl ether and water, equilibrium in the system (HORIBA), A., ii, 592.

and sulphuric acid, equilibrium in the action between (KREMAN), A., ii, 28.

and water, boiling points of mixtures of (MARILLER), A., i, 513.

influence of water on the boiling point of, at various pressures (WADE and MERRIMAN), T., 997; P., 65.

influence of temperature on the basic water value of (JONES and LAPWORTH), T., 917; P., 100.

influence of, on reactions in heterogeneous systems (JABŁOŃSKI and JABŁOŃSKI), A., ii, 27.

equilibrium of, with fats (VANDELVELDE), A., i, 515.

influence of, on protein metabolism (SALANT and RIEGER), A., ii, 411.

action of, on toluene-p-diazonium hydroxide (ROBERTS and ALLEMAN), A., i, 369.

amount of, excreted by the animal organism (VÖLTZ and BAUDREXEL), A., ii, 218, 1011.

hydrochloride, heat of hydrolysis of (JONES and LAPWORTH), P., 143.

distinction between, and methyl alcohol (KLEIN), A., ii, 340.

colorimetric detection of, in presence of acetone (AGULHON), A., ii, 1140.

detection of small quantities of, in fermentation (KLÖCKER), A., ii, 941.

estimation of the vapour of (BAUDREXEL), A., ii, 1036.

estimation of, in wine (DUPERTHUIS and PHILIPPE), A., ii, 662.

**Ethyl alcohol**, β-amino-, from bean meal (TRIER), A., i, 771.

**Ethyl ether**, ethyl alcohol and water, equilibrium in the system (HORIBA), A., ii, 592.

equilibrium of, with hydrobromic acid, with chlorine, and with bromine (MCINTOSH), A., i, 256.

physical properties of mixtures of sulphuric acid and (POUND), T., 698.

and anthraquinone, the system (SMITS and TREUB), A., ii, 871.

degradation by means of (STANĚK), A., ii, 269.

use of, in analytical separations (MYLIUS), A., ii, 444; (MYLIUS and HÜTTNER), A., ii, 540.

**Ethyl ether**, estimation of traces of water in (TYRER), P., 142.

**Ethyl ether**, difluorobromo-, and di-fluorodibromo- (SWARTS), A., i, 763.

**Ethyl ether narcosis**, effect of, on body temperature and carbohydrate metabolism (GRUBE), A., ii, 303.

**Ethyl acetacetate-azobenzene-*p*-azosalicylic acid** (BÜLOW and HAAS), A., i, 339.

**Ethylamine salts**, and compound of, with carbon tetrabromide (DEHN and DEWEY), A., i, 915.

uranyl phosphate (BARTHE), A., i, 526.

*o*-**Ethylamino-*p*-sulphobenzoic acid** and its derivatives (KASTLE), A., i, 201.

**5-Ethylaminotolylmethyl-3-methylbenzoic acid**, 2-hydroxy-, and its sodium salt (ANILINFARBEN- & EXTRAKT-FABRIKEN VORM. J. R. GEIGY), A., i, 978.

**Ethylammonium nitrite** (RÄY and RAKSHIT), T., 1470; P., 72, 122.

osmichloride (GUTBIER and MAISCH), A., i, 19.

**5-Ethylanilino-1-phenyl-3-methylpyrazole**, 4-amino-, and its hydrochloride and benzoyl derivatives (MICHAELIS and ABRAHAM), A., i, 1038.

**2-Ethylanthranol-9** (SCHOLL, POTSCHEWAUSCHEG, and LENKO), A., i, 1008.

**2-Ethylanthraquinone**, and 1-amino-, 1-iodo-, and 1-nitro- (SCHOLL, POTSCHEWAUSCHEG, and LENKO), A., i, 1008.

**2-Ethylanthrone-9** (SCHOLL, POTSCHEWAUSCHEG, and LENKO), A., i, 1008.

**Ethylbebeerine** (SCHOLTZ), A., i, 913.

*o*-**Ethylbenzanilide**,  $\beta$ -chloro- (v. BRAUN and SOBECKI), A., i, 747.

**1-Ethylbenzene**,  $\alpha$ -chloro- (PICKARD and KENYON), T., 71.

**N-Ethylbenzidine** (RASSOW and BECKER), A., i, 933.

*p*-**Ethylbenzonitrile** (VORLANDER, FRIEDBERG, VAN DER MERVE, ROSENTHAL, HUTH, and v. BODECKER), A., i, 866.

**4-Ethylbenzophenone-2'-carboxylic acid** (SCHOLL, POTSCHEWAUSCHEG, and LENKO), A., i, 1008.

*p*-**Ethylbenzoyl cyanide** (VORLÄNDER, FRIEDBERG, VAN DER MERVE, ROSENTHAL, HUTH, and v. BODECKER), A., i, 866.

**1-Ethyl-3:4-dibromocyclohexane**,  $\alpha\beta$ -di-bromo- (LEBEDEFF and SKAVRONSKAJA), A., i, 959.

**Ethylisobutoxymethyl ketone** and its derivatives (BLAISE and PICARD), A., i, 175.

**Ethylisobutylsilicane**, dichloro- (BYGDEN), A., i, 846.

**$\alpha$ -Ethylbutyric acid**,  $\beta$ -hydroxy-, synthesis of (MATSCHUREVITSCH), A., i, 260.

**$\alpha$ -Ethylbutyrylcarbamic acid**,  $\alpha$ -bromo-, phenyl ester (FARBENFABRIKEN VORM. F. BAYER & Co.) A., i, 118.

**$\alpha$ -Ethylbutyrylcarbamide**,  $\alpha$ -bromo-. See Adaline.

**Ethylapocamphoric acid**, *cis*- and *trans*-forms, synthesis of, and *dihydroxy*- (KOMPPA and ROUTALA), A., i, 381.

**Ethylcarbamide**,  $\alpha$ -hydroxy- $\beta\beta$ -dichloro- (Ondo and CUTSMANO), A., i, 943.

**Ethylcarbamidecarboxylic acid**, esters of (MAUGUIN), A., i, 358.

***m*-Ethylcarbonatobenzoic acid** (DANIEL and NIERENSTEIN), A., i, 371.

**4-Ethylcarbonatobenzoic acid**, 3-nitro-, and its acid chloide (FRANCIS and NIERENSTEIN), A., i, 643.

**2-*o*-Ethylcarbonatobenzoyloxybenzoic acid** (EINHORN, HAAS, v. BAGH, LADISCH, and ROTHLAUF), A., i, 302.

**2-*p*-Ethylcarbonatobenzoyloxybenzoic acid**, 4-nitro- (FRANCIS and NIERENSTEIN), A., i, 644.

**3-*p*-Ethylcarbonatobenzoyloxybenzoic acid** (FRANCIS and NIERENSTEIN), A., i, 644.

**4-*p*-Ethylcarbonatobenzoyloxybenzoic acid**, 3-nitro- (FRANCIS and NIERENSTEIN), A., i, 643.

**Ethylcarbonato- $\omega$ -carbethoxyaminoacetophenone** (MANNICH and HAHN), A., i, 649.

**$\beta$ -Ethylcarbonato- $\alpha$ -ethylcinnamic acid**, ethyl ester (HALLER and BAUER), A., i, 300.

**Ethylcarbonato- $\Delta^1$ -cyclohexene** (HALLER and BAUER), A., i, 300.

**$\beta$ -Ethylcarbonato- $\alpha$ -methylcinnamic acid**, ethyl ester (HALLER and BAUER), A., i, 300.

**4-Ethylcarbonato-*m*-nitrobenzoic acid** (DANIEL and NIERENSTEIN), A., i, 371.

**$\alpha$ -Ethylcarbonato- $\alpha$ -phenyl- $\Delta\alpha$ -butylene** (HALLER and BAUER), A., i, 300.

**$\alpha$ -Ethylcarbonato- $\alpha$ -phenyl- $\Delta\alpha$ -isobutylene** (HALLER and BAUER), A., i, 299.

***p*-Ethylcarbonatophenylglyoxylonitrile** (FRANCIS and NIERENSTEIN), A., i, 644.

**$\alpha$ -Ethylcarbonato- $\alpha$ -phenyl- $\Delta\alpha$ -propylene** (HALLER and BAUER), A., i, 300.

**$\beta$ -Ethylcarbonato- $\beta\beta\beta$ -trimethyl- $\Delta\beta$ -pentene** (HALLER and BAUER), A., i, 300.

**$\alpha$ -Ethyl-*o*-coumaric acid** (FRIES and VOLK), A., i, 204.

**Ethylcreatinine salts** (HENZERLING), A., i, 21.

**Ethyldehydroapocamphoric acid** (KOMPPA and ROUTALA), A., i, 381.

**4-Ethyldiphenylmethane-2'-carboxylic acid** (SCHOLL, POTSCHEWAUSCHEG, and LENKO), A., i, 1008.

**Ethylene**, fusibility curve of, and methyl ether (BAUME and GERMAN), A., i, 830.

action of hypochlorous acid on derivatives of (UMNOVA), A., i, 249.

derivatives, isomerism in (ERLENMEYER), A., i, 780.

*d*:bromide, equilibrium of, with aluminium bromide (MENSCHUTKIN), A., i, 1.

**Ethylene, trichloro-**, pyrogenic decomposition of (NICODEMUS), A., i, 345.

*aa*-difluoro- $\beta$ -bromo-, and *aa*-difluoro- $\beta\beta$ -dibromo- (SWARTS), A., i, 763.

**Ethylenebis-5-propylbarbituric acid** (REMFRY), T., 623; P., 73.

**Ethylenediamine**, tetra-acetyl derivative of (FRANCHIMONT and DUBSKY), A., i, 529.

**Ethylenediammonium** auri-bromide and -chloride (GUTBIER and OBERMAIER), A., i, 424.

osmichloride (GUTBIER and MAISCH), A., i, 19.

*aa'*-**Ethylenedi-iminoisobutyric acid** and its ethyl ester, hydrochlorides of (SCHLESINGER), A., i, 427.

*aa'*-**Ethylenedi-iminodiisobutyric acid** and its copper salt (SCHLESINGER), A., i, 427.

*aa'*-**Ethylenedi-iminodiisobutyronitrile** hydrochloride (SCHLESINGER), A., i, 427.

**2-Ethylglutaconic acid**, *cis*- and *trans*-semianilides of (THOLE and THORPE), T., 2231.

*cis*-**a-Ethylglutaconic acid** and its silver salt and anhydride (THOLE and THORPE), T., 2225.

**a-Ethylglutaconicanhydride**, semi-anilide of (THOLE and THORPE), T., 2233.

**4(or 5)-Ethylglyoxaline**,  $\beta$ -amino-, formation of, from histidine, and its derivatives (EWINS and PYMAN), T., 339; P., 45.

new synthesis of (PYMAN), T., 668; P., 91.

physiological action of (DALE and LAIDLAW), A., ii, 137, 1017; (BARGER and DALE), A., ii, 217.

**$\beta$ -hydroxy-**, and its salts (WINDAUS and OPITZ), A., i, 753.

**$\gamma$ -Ethylheptan-5-ol** and its oxime (ZERNER), A., i, 950.

**d-Ethyl-*n*-hexylcarbinol** and its hydrogen phthalate, and brucine salt of the latter (PICKARD and KENYON), T., 60.

**l-Ethyl-*n*-hexylcarbinol** and hydrogen phthalate of, and its cinchonidine salt (PICKARD and KENYON), T., 61.

**$\alpha$ -Ethylhydrohydrastinine** (FREUND and LEDERER), A., i, 906.

**Ethylidenephthalideoxime** (LAPWORTH and STEELE), T., 1883.

**3-Ethylindole**,  $\beta$ -amino-, and its salts and derivatives (EWINS), T., 270; P., 20.

physiological action of (LAIDLAW), A., ii, 1120.

**Ethylmalonylbenzidine** (REMFRY), T., 622.

**$\alpha$ -Ethoxalylamino- $\alpha$ -phenylacetamide** (CLARKE and FRANCIS), T., 324.

**6- $\alpha$ -Ethoxycinnamic acid**, methyl ester (STOERMER, FRIDERICI, BRÄUTIGAM, and NECKEL), A., i, 297.

**$\gamma$ -Ethylpentane- $\beta\gamma$ -diol** (GAUTHIER), A., i, 415.

**9-Ethylphenanthrene** and *aa*-dichloro- (WILLGERODT and ALBERT), A., i, 882.

**Ethylpropylacetophenone** (DUMESNIL), A., i, 719.

**Ethylisopropylcarbinol**, rotation of (PICKARD and KENYON), P., 324.

**Ethylpropylsilicane**, dichloro- (BYGDEN), A., i, 846.

**3-Ethyl- $\alpha$ -pyrone**, 6-chloro-, and 6-hydroxy- (THOLE and THORPE), T., 2227.

**1-Ethylpyrrolidine** and its salts (v. BRAUN), A., i, 563.

**1-Ethyltetrazole** and its platinichloride (OLIVERI-MANDALÀ and ALAGNA), A., i, 243.

**4-Ethylthiobenzoic acid**, 2-amino- (LESSER), A., i, 456.

**2-Ethylthiol-1-phenyl-4-anisylidenehydantoin** (WHEELER and BRAUTLECHT), A., i, 501.

**2-Ethylthiol-1-phenyl-4-benzylhydantoin** (JOHNSON and BRAUTLECHT), A., i, 813.

**2-Ethylthiol-1-phenyl-4-benzylidenehydantoin** (WHEELER and BRAUTLECHT), A., i, 500.

**2-Ethylthiopyrimidine-5-acetic acid**, 6-amino-,  $\gamma$ -lactam of, and 6-chloro-, ethyl ester (JOHNSON, PECK, and AMBLER), A., i, 575.

**2-Ethylthio-3-phenyl-4-benzylidenehydantoin** (WHEELER and BRAUTLECHT), A., i, 501.

**Ethyltoluene**, 3:5-dichloro-4- $\beta\beta$ -dichloro- (AUWERS), A., i, 384.

**Eucalyptol.** See Cineole.

***o*-isoEugenol** and bromo-, dibromide (PAULY, v. BUTTLAR, and LOCKEMANN), A., i, 785.

**Euquinine**, distinction between quinine and (ASTRUC and COURTIN), A., i, 396.

**Europium** (JAMES and ROBINSON), A., ii, 893.

**Eutectic** mixtures, composition of (DESH), A., ii, 381.

formulae of (GORBOFF), A., ii, 264.

**Eugenite** from Madagascar (LACROIX), A., ii, 295.

**Evodene** (SEMMLER and SCHÖSSBERGER), A., i, 1002.

**Explosions**, the initiation and propagation of (DIXON), T., 588.

**Explosives**, safety, used in mines (TAF-FANEL), A., ii, 38.

detection of mercury in (PATTERSON), A., ii, 442; (FLORIN), A., ii, 1033.

**Extraction apparatus** (v. DER HEIDE), A., ii, 651; (QUINCKE; KOOLMAN), A., ii, 877; (HALLE), A., ii, 975. for high temperatures (SCHURAVLEFF), A., ii, 1082.

preventing formation of emulsions (POZZI-ESCOL), A., ii, 975.

for separation of aqueous liquids by organic solvents (KEMPF), A., ii, 106.

**F.**

**Fæces**, estimation of volatile fatty acids in (McCAUGHEY), A., ii, 666; (EDELSTEIN and WELDE), A., ii, 827.

**Fagaria xanthoxyloides**, constituents of (PRIESS), A., ii, 646.

**Fagarol** (PRIESS), A., ii, 646.

**Fahlerz**, composition of (KRETSCHMER), A., ii, 119.

**Faraday** lecture (RICHARDS), T., 1201; P., 178.

**Fasting** (HOWE and HAWK), A., ii, 304; (HAWK), A., ii, 411, 412; (HOWE, MATTILL, and HAWK), A., ii, 412; (WREATH and HAWK), A., ii, 1012.

**Fat**, formation of carbohydrates from, in the animal organism (JUNKERSDORF), A., ii, 127.

staining of (LORRAIN), A., ii, 57.

resorption of reserve (PIETTRE), A., ii, 905.

transport of, through the intestinal wall (NOLL), A., ii, 128.

utilisation of, after water-drinking at meals (MATTILL and HAWK), A., ii, 410.

in dog's blood (LATTES), A., ii, 994.

**Fat**, colostral (ENGEL and BODE), A., ii, 1010.

estimation of, in food (NEUMANN), A., ii, 1040.

estimation of, in milk (JONA), A., ii, 234; (OERUM), A., ii, 943.

estimation of, in pathological urine (KAKIUCHI), A., ii, 549.

**Fats**, synthesis of, by enzymes (DUNLAP and GILBERT), A., i, 1054.

extracted from the fruits of tropical plants (HÉBERT), A., ii, 819.

from *Hydnocarpus* (LENDRICH, KOCH, and SCHWARZ), A., ii, 1125.

physical constants of, from swine (EMMETT and CARRROLL), A., ii, 411.

equilibrium of, with ethyl alcohol (VANDEVELDE), A., i, 515.

preparation of halogen derivatives of (VOSWINKEL), A., i, 601.

apparatus for determination of the melting-points of (v. LIEBERMANN), A., ii, 1039.

of animal organs, behaviour of, in antiseptic preservation (SHIBATA), A., ii, 304.

hydrolysis of, by blood and serum (RONA and MICHAELIS), A., ii, 302.

scission of, by bacteria (SÖHNGEN), A., ii, 319.

destruction of, by moulds (OHTA), A., ii, 321.

decomposition of (HERTKORN), A., ii, 138.

digestion of (v. PESTHY), A., ii, 742.

influence of the melting point of, on their rate of disappearance from the stomach (TANGL and ERDÉLYI), A., ii, 742.

influence of, on the activity of liver ferments (CHOAY), A., ii, 747.

metabolism of. See under Metabolism.

toxicity of decomposed (BOKORNY), A., ii, 756.

detection of benzoic acid in (FRIESE), A., ii, 1142.

estimation of free acid in (BÖDTKER), A., ii, 666.

estimation of free fatty acids in presence of soaps (HOLDE and MARCUSSON), A., ii, 1037.

and oils, estimation of the acidity of (LOEBELL), A., ii, 342.

estimation of glycerol in (BEYTHIEN, HEMPEL, SIMMICH, SCHWERDT, and WIESEMAN), A., ii, 774.

apparatus for determination of the iodine number (DOMINIKIEWICZ), A., ii, 447.

estimation of the saponification number of (WINKLER), A., ii, 550.

**Fatigue**, chemistry of (BURRIDGE), A., ii, 131.

**Fayalite** from the island of Pantelleria (SOELLNER), A., ii, 502.

**Feeding**, over-abundant, adaptation of the animal organism to (GRAFE and GRAHAM), A., ii, 811.

**Fehling's solution** (ROSENKRANZ), A., ii, 663.

**Felspar** from Virginia (THORNTON), A., ii, 406.

**Fenchazine** (KIJNER and PROSKURJA-KOFF), A., i, 680.

**Fenchane** (KIJNER and PROSKURJAKOFF), A., i, 680.

*iso***Fenchonecarboxylic acid**, methyl ester (SEMMLER and MAYER), A., i, 733.

**Fenchonitrile**, and its derivatives (WALLACH and OLDEMBERG), A., i, 311.

**Fermentation**, chemical hypotheses of (LÖB), A., i, 14.

consumption of malic acid and formation of lactic acid during (MESTREZAT), A., ii, 421.

in the body, action of nucleic acid on (TSCHERNORUZKI), A., ii, 1119.

alcoholic (FRANZEN and STEPPUHN), A., ii, 1122.

mechanism of (LEBEDEFF), A., ii, 816, 1122.

non-production of, by animal tissues (HARDEN and MACLEAN), A., ii, 215.

intermediate products of (v. EULER and FODOR), A., i, 950.

dihydroxyacetone as a product of (KARAUSCHANOFF), A., ii, 914.

nuclein, enzymes of (JONES), A., i, 410.

sugar-free, by yeast (NEUBERG and HILDESHEIMER), A., ii, 320.

yeast, degradation of amino-acids in (NEUBAUER and FROMHERZ), A., i, 201.

detection of small quantities of alcohol in (KLÖCKER), A., ii, 941.

**Ferments**. See Enzymes.

**Fermorite** from India (SMITH and PRIOR), A., ii, 1103.

**Ferriacetoacetic acid**, ethylester (KNORR and SCHUBERT), A., i, 948.

**Ferric salts**. See under Iron.

**Ferricyanides**. See under Iron.

**Ferriformylphenylacetic acid**, ethyl ester (KNORR and SCHUBERT), A., i, 948.

**Ferritungstite** (SCHALLER), A., ii, 903.

**Ferroconcrete**, cause of the de-rusting of iron in (ROHLAND), A., ii, 1093.

**Ferrocyanides**. See under Iron.

**Ferro-magnetic** substances, magnetisation of, at high temperatures (WEISS and FOËX), A., ii, 183, 250.

**Ferronitrososulphide** (ROSENBERG), A., ii, 290.

**Ferronitrosulphides** and their relation to the nitroprussides (ROSENBERG), A., ii, 290.

**Ferro-uranium**, analysis of (TRAUTMANN), A., ii, 157.

**Ferrous salts**. See under Iron.

**Ferro-vanadium**, analysis of (TRAUTMANN), A., ii, 544.

**Ferro-zirconium**, analysis of (TRAUTMANN), A., ii, 157.

**Ferulic acid**,  $\alpha$ -cyano-, and its ethyl ester (CLARKE and FRANCIS), A., i, 205.

**4-Feruloyloxybenzoic acid** (FISCHER, FREUDENBERG, and HOESCH), A., i, 875.

**Fibroferrite** from Siena (MANASSE), A., ii, 499.

**Filter**, automatic (HAMLIN), A., ii, 976.

**Filtering apparatus** for hygroscopic substances (STEINKOPF), A., ii, 105.

**Filter paper**, concentric stratification in (LENK and BRACH), A., ii, 702.

**Filtration**, automatic apparatus for (BELLAIRE-WÖRSCHWEILER), A., ii, 876.

apparatus for, under increased pressure (LOHMANN), A., ii, 1081.

funnel for (SPURRIER), A., ii, 976.

**Fisetol**, hydroxy-, triethyl ether of (PERKIN), T., 1725; P., 225.

**Fish**, constituents of (ULRICH), A., ii, 305.

proteins in the ovary of (MCCRUDDEN), A., ii, 415.

toxicity of the ovaries of (MCCRUDDEN), A., ii, 421.

poisons, method of action of (PRIESS), A., ii, 638.

**Fishes**, teleostean, production of gases in (WOODLAND), A., ii, 1113.

**Flame**, electric, behaviour of carbon dioxide and mixtures of, in the (MUTHMANN and SCHAIDHAUT), A., ii, 790.

formation of hydrogen cyanide in the (MOSCICKI), A., ii, 1057.

**Flames**, radioactive properties of high temperature flames (CARTER), A., ii, 1046.

velocity of ions of salts of alkali metals in (WILSON), A., ii, 572.

ammonia and nitric oxide in (REIS), A., ii, 483.

**Flavanthren**, new synthesis of (BENESCH), A., i, 794.

**Float-stone** (*schaumopal*), analysis of (HAUSER), A., ii, 808.

**Floridez**, colouring-matters of the (KYLIN), A., ii, 1024.

green and yellow dyes of (MARCH-LEWSKI), A., ii, 1125.

**Flour**, bleaching of (HAMILL; MONIER-WILLIAMS), A., ii, 1001.

**Fluidity** of binary mixtures (DRUCKER and KASSEL), A., ii, 373.

of mixed liquids, relation between viscosity and (BINGHAM and WHITE), A., ii, 858.

**Fluoran**, synthesis of (FERRARIO and NEUMANN), A., i, 316.

**Fluorene**, freezing-point curves of mixtures of, with nitro-compounds (KREMMANN, DISCHENDORFER, FRANKOVIC, HAUSER, HÖNEL, SCHOULZ, and VALENTA), A., ii, 871.

magnesium derivative of (GRIGNARD and COURTOT), A., i, 538.

**Fluorenone** (*diphenylene ketone*), isomerism of the red and yellow forms of (STOBBE), A., i, 651.

**Fluorenonehydrazone** (WIELAND and ROSEEU), A., i, 572.

**Fluorenonetetrazine** (WIELAND and ROSEEU), A., i, 572.

**Fluorenyldiphenylcarbinol** (GRIGNARD and COURTOT), A., i, 538.

*tert*.-**Fluorenylfluorenol** and its derivatives (GRIGNARD and COURTOT), A., i, 538.

**Fluorescein**, fluorescence and absorption of (KAEMPF), A., ii, 833.

**Fluorescence**, theory of (STARK), A., ii, 786.

of cinchona alkaloids (RABE and MARSCHALL), A., i, 741.

of hydrocarbons and their derivatives (STOBBE and EBERT), A., ii, 562.

**Fluorine**, magnetic properties of (PASCAL), A., ii, 464.

**Hydrofluoric acid**, action of, on metallic oxides (VAN HAAGEN and SMITH), A., ii, 894.

**Fluorides**, detection of (BROWNING), A., ii, 1030.

estimation of (STARCK), A., ii, 436.

estimation of, in silicates (KLEINSTÜCK), A., ii, 1026.

estimation of, in water (GAUTIER and MOUREU), A., ii, 301.

**Fluorone** derivatives (POPE and HOWARD), T., 545; P., 52.

**Fly agaric** (*Amanita muscaria*), chemistry of (ZELLNER), A., ii, 425.

**Fœtus**, protein metabolism of the (LINDSAY), A., ii, 1115.

**Fog** particles, electric charge on (PRZIBRAM), A., ii, 363.

**Food**, value of rice, as a (ARON and HOCSON), A., ii, 625.

influence of intake of, on gaseous metabolism and energy production (GIGON), A., ii, 741.

**Foods**, presence of allantoin in (ACKROYD), A., ii, 308.

detection of benzoic acid in (POLENSKE; FRIESE), A., ii, 1142.

detection of boric acid in (v. FELLENBERG), A., ii, 657.

dressed, detection of starch in (CARLES), A., ii, 340.

estimation of fat in (NEUMANN), A., ii, 1040.

estimation of formic acid in (FINCKE), A., ii, 232.

**Formaldehyde**, preparation of, by the contact process (LE BLANC and PLASCHKE), A., i, 176.

formation of glycogen from, in the liver (SCHÖNDORFF and GREBE), A., ii, 306; (GRUBE), A., ii, 410.

effect of ultra-violet light on (PRIBRAM), A., i, 420.

influence of the vapour of, on the organism (IWANOFF), A., ii, 419.

action of, on potassium cyanide (FRANZEN), A., i, 323.

action of, on Witte's peptone (SCHRÖVER), A., i, 246.

action of, on petroleum distillates (NASTUKOFF and MALJAROFF), A., i, 249.

action of, on plants (BOKORNY), A., ii, 1021.

reactions of, with unsaturated fatty acids (FOKIN), A., i, 765.

gaseous, action of, on green plants (GRAFE), A., ii, 818.

estimation of (HERRMANN), A., ii, 161.

estimation of, by the ammonia process (BEYTHIEN, HEMPEL, SIMMICH, SCHWERDT, and WIESEMANN), A., ii, 776.

**Formic acid**, formation of, in catabolism of fatty acids (DAKIN and WAKEMAN), A., ii, 623.

anhydrous, preparation and properties of (GARNER, SEXTON, and PARKER), A., i, 831.

velocity of reaction of bromine on (JOSEPH), A., ii, 384.

catalytic decomposition of (SABATIER and MAILHE), A., i, 515.

esterification of (SABATIER and MAILHE), A., i, 416.

compounds of, with unsaturated acids (FARBWERKE VORM. MEISTER, LUCIUS, and BRÜNING), A., i, 107.

interaction of, and cellulose (CROSS and BEVAN), T., 1450; P., 149.

**Formic acid**, fermentation of, by *Bacillus kilicense* (FRANZEN and GREVE), A., ii, 60.

aluminium, chromium, and iron salts of (MUTH), A., i, 257.

dysprosium salt of (JANTSCH and OHL), A., ii, 493.

sodium salt, action of organic acids on (OECHSNER DE CONINCK), A., i, 764.

salt of, with *o*-aminophenol (SUIDA), A., i, 284.

**Formic acid**, cyano-, ethyl ester, condensation of hydrazoic acid with (OLIVERI-MANDALA), A., i, 337.

**Formic acid**, anhydrous, reaction of, with nitrates (QUARTAROLI), A., ii, 1079.

estimation of (FRANZEN and EGGER), A., ii, 446.

estimation of, in foods (FINCKE), A., ii, 232.

See also Orthoformic acid.

**Formylacetic acid**,  $\alpha$ -chloro-, ethyl ester, and its salts and derivatives (WISLICENUS), A., i, 108.

**Formyldeoxybenzone**, desmotropism and derivatives of, and bromo- (WISLICENUS and RUTHING), A., i, 303.

**Formyldimethyloctandionol** (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 102.

**Formylglutaconic acid**, and bromo-ethyl esters, and their isomerides and derivatives (WISLICENUS and v. WRANGELL), A., i, 521.

**Formylguanidine**, and its bromo- derivative (TRAUBE), A., i, 115.

**Formylhomopiperonylamine** (DECKER), A., i, 906.

**Fox**, analyses of the urine of the dog, coyote and (HAWK), A., ii, 308.

**Fractionating** apparatus, an electrically heated vacuum (BAILEY), A., ii, 256.

column (BAUM), A., ii, 467.

**Frangula-emodin**, constitution of (OESTERLE and SYPKENS-TOXOPÉUS), A., i, 887.

**Fraxin** in *Diervilla lutea* (CHARAUX), A., ii, 1023.

**Freezing-point** curves of gaseous mixtures (BAUME), A., ii, 581.

**Friedel-Crafts' reaction** (BÖESEKEN), A., i, 531; (BÖESEKEN and KONING), A., i, 532; (HALLA), A., i, 784.

**Frog's heart**. See Heart.

**Fruit juices**, estimation of salicylic acid in (VIERHOUT), A., ii, 775.

**Fruits**, oxydase in (BASSETT and THOMPSON), A., ii, 425.

substances yielding hydrogen cyanide in the seeds of (HUBER), A., ii, 1022.

**Fruits**, preserved, proportion of dextrose to levulose in (FAVREL and GARNIER), A., ii, 1036.

ripening, tannin in (LLOYD), A., ii, 918.

and their juices, estimation of tartaric acid in (WARCOLLIER), A., ii, 1038.

**Fucose**, stereochemical configuration of (HUDSON), A., i, 355.

**Fulgenic acids** (STOBBE), A., i, 374.

**Fulgides** (STOBBE), A., i, 373.

**Fulminic acid** (WIELAND), A., i, 23.

action of hydrogen sulphide on (CAMBI), A., i, 429.

**Fumaric acid**, synthesis of, from acetylene di-iodide (KEISER and MASTER), A., i, 949.

isomerism of, and maleic acid (GLASMANN), A., i, 261.

oxidation of, by animal tissues (BATELLI and STERN), A., ii, 412.

menthyl esters of (HILDITCH), T., 223; P., 6.

**Fumaronitrile** (KEISER and KESSLER), A., i, 949.

**Fungi**, pentosans in (WICHERS and TOLLENS) A., ii, 63.

fixation of nitrogen by (LIPMAN), A., ii, 1019.

lower, pentosans in (DOX and NEIDIG), A., ii, 644.

phytase in (DOX and GOLDEN), A., ii, 1022.

mould, behaviour of, towards amino-acids (HERZOG and SALADIN), A., ii, 915.

behaviour of, towards organic acids (HERZOG and RIPKE; HERZOG, RIPKE, and SALADIN), A., ii, 915.

parasitic, erepsin in (REED and STAHL), A., ii, 916.

wood, estimation of pentosans and methylpentosans in (ISHIDA and TOLLENS), A., ii, 645.

**Fungicide**, colloidal copper as a (VERMOREL and DANTONY), A., ii, 647.

**Funnel**, improved (BLACKMAN), A., ii, 796.

new (BLACKMAN), A., ii, 1081.

support for (BLACKMAN), A., ii, 796, 1081.

**Furan-2-carboxylic acid**, 5-amino-3-cyano-, and its derivatives (DIECKMANN), A., i, 457.

**Furfuraldehyde** and water, density and refraction of the system (SCHWERS), A., ii, 949.

reduction of, by yeast (LINTNER and VON LIEBIG), A., ii, 816.

**Furfuraldehyde- $\alpha$ - and  $\beta$ -naphthylhydr-azones** (SANTI), A., i, 1030.

**Furfuraldehyde-*p*-tolylhydrazone** (SANTTI), A., i, 1030.  
**Furfurylideneecinnamylideneacetone**. See  $\beta$ -Styryl- $\beta'$ -furyldivinyl ketone.  
**Furfurylidenehydantoin** (WHEELER and HOFFMAN), A., i, 499.  
**Furnace** for sealed tubes (BENNER), A., ii, 875.  
 muffle, for the laboratory (POZZI-ESCOR), A., ii, 269.  
**Furnace gas**, estimation of the constituents of (LÁSZLÓ), A., ii, 929.  
**Furoylacetic acid**, behaviour of, in the body (FRIEDMANN), A., ii, 910.  
**Furylacrylic acid**, behaviour of, in the body (FRIEDMANN), A., ii, 910.  
**Furylallylcarbinol** (SEMENTSOFF and KONJUKOFF-DOBRYNIA), A., i, 1007.  
**Fusel oil**, detection of, in brandy (HERZOG), A., ii, 446.

**G.**

**Gabbro magma**, fusion of (ANDESNER), A., ii, 47.  
**Gadolinite earths**, new element from the (URBAIN), A., ii, 115.  
**Gajite** (TUCAN), A., ii, 498.  
***d*-Galactophosphoric acid**, calcium salt (NEUBERG and KRETSCHMER), A., i, 837.  
**Galactose**, action of barium hydroxide on (UPSON), A., i, 423.  
***d*-Galactose** on berries of ivy (v. LIPP-MANN), A., ii, 142.  
**Galactose-*o*-carboxyanilide** and its barium derivative (IRVINE and HYND), T., 163; P., 9.  
**Galanthus nivalis** (snowdrop), carbohydrate of the foliage leaf of (PARKIN), A., ii, 1127.  
**Galipoidine** and its salts (TRÖGER and RUNNE), A., i, 483.  
**Gallamide trimethyl ether**, nitro- (HARDING), T., 1595.  
**Gallein, tetrachloro-**, and its derivatives (ORNDORFF and DELBRIDGE), A., i, 737.  
**Galleincarbinolcarboxylic acid**, tetra-chloro-, and its derivatives (ORNDORFF and DELBRIDGE), A., i, 738.  
**Gallic acid**, colouring-matters from (EHRMANN), A., i, 459.  
 trimethyl ether, action of nitric acid on (HARDING), T., 1592; P., 213.  
**cycloGallipharic acid**, pyrogenetic decomposition of (KUNZ-KRAUSE and MANICKE), A., i, 130.  
**Gallisin**, nature of, in starch-syrup (GATTERBAUER), A., i, 837.

**Gallotannic acid**, chemical constitution of, and its potassium salt (PANIKER and STIASNY), T., 1819; P., 213.  
**Galloylformic acid** (FRANCIS and NIERENSTEIN), A., i, 644.  
**Gall stones**, occurrence of deoxycholic acid in (KÜSTER), A., ii, 57.  
**Garlic**. See *Allium sativum*.  
**Garnet** (SMITH), A., ii, 501.  
 from Sardinia (SERRA), A., ii, 123.  
**Gas**, history of the name (v. LIPP-MANN), A., ii, 199.  
 dynamics of a, in motion (JÜTTNER), A., ii, 579.  
 theory of solution and heat of dissolution of a (COLSON), A., ii, 1066.  
 rate of dissolution of a, in a liquid (CARLSON), A., ii, 589.  
 equilibrium in a dissociating (STAFFORD and v. WARTENBERG), A., ii, 700.  
 electrolytic, chemical action of the electric discharge in (KIRKBY), A., ii, 462.  
**Gases** from the soffioni of Larderello (PORLEZZA and NORZI), A., ii, 1106.  
 analyses of, from mines (MOUREU and LEPAPE), A., ii, 1087.  
 enclosed in tektites (BECK), A., ii, 292.  
 from the walls of heated tubes of glass, porcelain and silica (GUICHARD), A., ii, 396.  
 spectra of (DONALDSON), A., ii, 1042.  
 compound, separation of spectra in (STEAD), A., ii, 1041.  
 anode and cathode spectra of (STEAD), A., ii, 830.  
 refraction and dispersion of light in (GRUSCHKE), A., ii, 349.  
 anomalous dispersion of light in (JULIUS and VAN DER PLAATS), A., ii, 449.  
 carriers of electricity in (BECKER), A., ii, 957.  
 ionisation of (TOWNSEND), A., ii, 355; (FRANCK and WESTPHAL), A., ii, 957.  
 effect of temperature on the (CLO), A., ii, 355.  
 in presence of non-radioactive substances (DE BROGLIE and BRIZARD), A., ii, 837.  
 by canal rays (SEELIGER), A., ii, 958.  
 by chemical change (BAKER), A., ii, 244.  
 by light (CANNEGIETER), A., ii, 455.  
 by ultra-violet light (SACHS), A., ii, 246.

**Gases**, ionisation by  $\alpha$ -rays (MOULIN), A., ii, 171.  
 by the  $\alpha$ -particles from polonium (TAYLOR), A., ii, 354.  
 relation of valency to (MILLIKAN and FLETCHER), A., ii, 573.  
 charges on ions in (TOWNSEND), A., ii, 686.  
 mobility of ions in (REINGANUM), A., ii, 788, 837.  
 behaviour of mixtures of, in the electric flame (MUTHMANN and SCHAIDHAUF), A., ii, 790.  
 transformation of energy in photochemical reactions in (WARBURG), A., ii, 834.  
 magnetic permeability of (ROOP), A., ii, 183.  
 thermal conductivity of (KNUDSEN), A., ii, 368.  
 specific heat of (THIBAUT), A., ii, 695 ; (DRUCKER), A., ii, 792.  
 fusibility curves of mixtures of (BAUME and GERMANN), A., i, 830.  
 determination of the density of (JAQUEROD and TOURPAÏAN), A., ii, 189.  
 kinetic theory of, and thermodynamics (BERTHOUD), A., ii, 578.  
 molecular pressures of, in tubes (KNUDSEN), A., ii, 188.  
 internal pressure of (LEDUC), A., ii, 792.  
 condensation of two (BRINER), A., ii, 705.  
 viscosity of (BINGHAM), A., ii, 372.  
 determination of the solubility of (MOLES), A., ii, 473.  
 solubility of, in mixed liquids (DRUCKER and MOLES), A., ii, 23.  
 solubility of, in blood and serum (FINDLAY and CREIGHTON), A., ii, 211.  
 of the argon group, physical constants of (CUTHBERTSON), A., ii, 108.  
 viscosity of (REINGANUM), A., ii, 858.  
 relation between atomic weight and viscosity for (RANKINE), A., ii, 87.  
 dielectric cohesion of (BOUTY), A., ii, 458.  
 combustible, quantitative analysis of (DE VOLDERE), A., ii, 329.  
 heavy, ionisation of, by Röntgen rays (BEATTY), A., ii, 245.  
 inert, purification of (GEHLHOFF), A., ii, 487.  
 liquefied, binary mixtures of (BAGSTER), T., 1218 ; P., 141.  
 heat of vapourisation of (ESTREICHER and SCHNERR), A., ii, 16.

**Gases**, luminous, emission spectra of (JUNGJOHANN), A., ii, 82.  
 rare, in thermal springs (MOUREU), A., ii, 808.  
 rarefied, conduction of heat through (SODDY and BERRY), A., ii, 253.  
 from springs, ratio of argon to nitrogen in (WALTER), A., ii, 280.  
 mechanism of exchange of, in the lungs (DU BOIS-REYMOND), A., ii, 503.  
**Gas-absorption apparatus** for attachment to the tops of burettes, etc. (GÖCKEL), A., ii, 328.  
**Gas-absorption flasks**, device for setting up a series of (RECKLEBEN), A., ii, 268.  
**Gas analysis** (WILHELMI), A., ii, 652.  
 principles of (DE VOLDERE), A., ii, 329.  
 apparatus for (MOHR), A., ii, 149.  
 burette for use in (GAWALOWSKI), A., ii, 651.  
 calculation of results of (JELLER), A., ii, 433.  
**Gas burner**, self-regulating (HANFLAND), A., ii, 714.  
**Gas-generating apparatus** (MICHEL), A., 200 ; (PREUSS), A., ii, 975.  
**Gas laws**, applicability of the, to emulsions (ILYIN), A., ii, 861.  
**Gas regulator** for thermostats (SLATOR), A., ii, 199.  
**Gas wash-bottle**, new (FRIEDRICH), A., ii, 268.  
**Gaseous combustion** (BRITISH ASSOCIATION REPORTS), A., ii, 799.  
**Gaseous explosions** (BRITISH ASSOCIATION REPORTS), A., ii, 792.  
**Gaseous mixtures**, freezing-point curves of (BAUME), A., ii, 581.  
**Gastric juice**, effect of copious water drinking on the secretion of (WILLS and HAWK), A., ii, 214.  
 peptolytic enzymes in the (KUTTNER and PULVERMACHER), A., ii, 513.  
 origin of the hydrochloric acid in the (FITZGERALD), A., ii, 50.  
 measurement of the acidity of the (MICHAELIS and DAVIDSOHN), A., ii, 505.  
 secretion of, when the supply of chlorine is lessened (ROSEMAN), A., ii, 998.  
 calf's, rennin and pepsin in (RAKOCZY), A., i, 827.  
**Gastro-intestinal juice**, action of, on nucleic acids (LEVENE and MEDI-GRECEANU), A., ii, 744 ; (LONDON, SCHITTENHELM, and WIENER), A., ii, 745.

**Gelatin**, action of dilute acids and salt solutions on (PROCTER), A., i, 342.  
 imbibition by, in acids and bases (CHIARI), A., i, 590.  
 resorption of, from the small intestine (REACH), A., ii, 1109.  
 swelling and contraction of (SPIRO), A., ii, 379.  
 methylation of (SKRAUP and BÖTTCHER), A., i, 247.  
 action of enzymes of the alimentary canal on (MINAMI), A., ii, 810.  
 intestinal digestion of (MINAMI), A., ii, 810.  
 analysis of (HEROLD), A., ii, 348.  
 estimation of (GREIFFENHAGEN, KÖNIG, and SCHOLL), A., ii, 947.

**Gelatinous media**, reactions in (LIESEGANG), A., ii, 306.

**Gelsemine**, derivatives of (MOORE), T., 1231; P., 157.

*apo***Gelsemine** and its salts and derivatives (MOORE), T., 1234; P., 157.

*isoapo***Gelsemine**, and bromo-, and chloro-, and their salts and derivatives (MOORE), T., 1239; P., 157.

**Gentian**, constituents of the root of (BRIDEL), A., ii, 426; (BURMANN), A., ii, 528.

**Gentiopicrin**, alcoholic, action of emulsion on (BOURQUELOT and BRIDEL), A., i, 1053.

**Gentisinaldehyde**, semicarbazone (PAULY, SCHÜBEL, and LOCKEMANN), A., i, 788.

di-*p*-nitrobenzyl mercaptal (PAULY, v. BUTTLAR, and LOCKEMANN), A., i, 786.

**Geocoronium** (WEGENER), A., ii, 271.

**Geological time**, measurement of, by means of the ratio of lead to uranium in minerals (HOLMES), A., ii, 570; (ZAMBONINI), A., ii, 959.

*iso***Geraniol** and its derivatives (SEMMLER and SCHOSBERGER), A., i, 475.

**β-Geranyl-*d*-glucoside** and its tetra-acetyl derivative (FISCHER and HELFERICH), A., i, 802.

**Germanium**, melting point and frequency of atomic vibration of (BILTZ), A., ii, 1097.

**German silver**, quantitative analysis of (KORTE), A., ii, 155.

**Germination**, influence of acidity on (PROMSY), A., ii, 322.  
 induced, of seeds (MAZÉ), A., ii, 141.

**Gingergrass oil**, alcohol from (SEMMLER and ZAAR), A., i, 313.

**Gitalin** and its hydrate (KRAFT), A., i, 734.

**Gland**, choroid. See Choroid.  
 thyroid. See Thyroid.

**Glands**, physiology of (ASHER and FLACK), A., ii, 55.  
 mammary, production of lactose in (PATON and CATHCART), A., ii, 415.

**Glauberite** from Nancy (DÜRRFELD), A., ii, 295.

**Glaucodote**, experiments with (BEUTELL), A., ii, 728.

**Gliadin**, refractive index of (ROBERTSON and GREAVES), A., i, 589.  
 hydrolysis of (OSBORNE and GUEST), A., i, 697.  
 action of the pancreatic juice on (BAGLIONI), A., ii, 999.

estimation of (GREAVES), A., ii, 674.

**Globulin**, estimation of, by means of ammonium sulphate (WIENER), A., ii, 1144.

**Globulins**, nature of (SCHRYVER), A., i, 245.

**Globulinites** of the alkaline earths, dissociation of (ROBERTSON), A., i, 406.

**Glucinum**, spectrum of (LECOQ DE BOISBAUDRAN and DE GRAMONT), A., ii, 832.  
 separation of, and aluminium (WUNDER and CHÉLADZÉ), A., ii, 773.

**α-Glucodecitol** and its derivatives (PHILIPPE), A., i, 606.

**α-Glucodeconic acid**, derivatives and metallic and alkaloidal salts of (PHILIPPE), A., i, 12.

**β-Glucodeconic acid**, salts and derivatives of (PHILIPPE), A., i, 112.

**α-Glucodecose** and its osazone and phenylhydrazone (PHILIPPE), A., i, 605.

**Gluco-*p*-hydroxybenzoic acid** (MAUTHNER), A., i, 647.

**Gluconic acid**, behaviour of, in the organism (SCHOTT), A., ii, 514.

**d-Gluconic acid**, formation of, by *Bacterium savastanoi* (ALSBERG), A., ii, 317.

**Glucosamine**, formation of laevulin acid from (HAMBURGER), A., i, 834.  
 glycogenetic property of (ROGOŚNICKI), A., ii, 814.

**d-Glucosamine**, derivatives of (IRVINE, McNICOLL, and HYND), T., 250; P., 23.

**Glucosealanide** (IRVINE and HYND), T., 166; P., 9.

**Glucose-protein** in *Ascaris lumbricoides* (MCCRUDDEN), A., ii, 415.

**Glucosides**, synthetic (FISCHER and HELFERICH), A., i, 802.  
 effect of, on solutions of salts (GLOVER), T., 379.  
 antagonism of cholesterol to the action of, on the heart (KARAÚLOW), A., ii, 517.

**Glucosides.** See also :—

Anhydrogitaligenin.  
Anhydrogitalin.  
Arbutin.  
Aucubin.  
Clavicepsin.  
Convallamarin.  
Convallarin.  
Fraxin.  
Gitalin.  
Meliatin.  
Vicianin.

$\beta$ -d-Glucosidoglycollic acid and its salts and derivatives (FISCHER and HELFERTICH), A., i, 802.

**Glucosin** and its derivatives (GATTERBAUER), A., i, 837.

**Glucovanillic acid**, synthesis of (MAUTHNER), A., i, 647.

**Glutaconic acids**, chemistry of the (THOLE and THORPE), T., 2187, 2208; P., 122, 252.

**Glutaric acid-bisphenylhydrazide** (SCHEIBER and LUNGWITZ), A., i, 836.

**Glutarylacetooacetic acid**, ethyl ester (SCHEIBER and LUNGWITZ), A., i, 836.

**Glycerides**, synthesis of the (BELLUCCI and MANZETTI), A., i, 259, 515; (GIANOLI), A., i, 349; (BELLUCCI), A., i, 416.

**Glycerol**, action of ultra-violet light on (BIERRY, HENRI, and RANC), A., i, 255. conductivity and viscosity in mixed solvents containing (GUY and JONES), A., ii, 863.

solubility of lime in solutions of (CAMERON and PATTEN), A., i, 179. chloro-m-tolyl ether (ABDERHALDEN and BAUMANN), A., i, 544.

$\alpha$ -ethyl  $\gamma$ -propyl ether (BOEHRINGER & SOHNE), A., i, 103.

methyl ether (BOEHRINGER & SOHNE), A., i, 103.

propyl ether (BOEHRINGER & SOHNE), A., i, 103.

m-tolyl ether (ABDERHALDEN and BAUMANN), A., i, 543.

**Glycerol**, estimation of (STEINFELS), A., ii, 159; (WAGENAAR), A., ii, 663.

estimation of, in fats and soaps (BEYTHIEN, HEMPEL, SIMMICH, SCHWERDT, and WIESEMANN), A., ii, 774.

estimation of, in wine (RINATI), A., ii, 545.

tartaric acid and tannin, estimation of, in liquids (HINARD), A., ii, 942.

**Glyceroldiglycyl-l-tyrosine** (ABDERHALDEN and BAUMANN), A., i, 544.

**Glyceroldityrosine** and its copper salt (ABDERHALDEN and BAUMANN), A., i, 544.

**Glycerolphosphoric acid** and its barium salt (LANGHELD), A., i, 706. velocity of hydrolysis of (MALENGREAU and PRIGENT), A., ii, 795. calcium salt (NEUBERG and KRETSCHMER), A., i, 837.

**Glycerolmonotyrosine**, copper salt of (ABDERHALDEN and BAUMANN), A., i, 543.

**Glycerophosphoric acid**, silver and sodium salts (PAOLINI), A., i, 774.

**Glyceryl**  $\beta$ -benzyl  $\alpha$  $\gamma$ -dimethyl ether (BOEHRINGER & SOHNE), A., i, 103.

$\alpha$  $\gamma$ -diethyl  $\beta$ -propyl ether (BOEHRINGER & SOHNE), A., i, 103.

$\alpha$  $\beta$ -dimethyl  $\gamma$ -ethyl ether (BOEHRINGER & SOHNE), A., i, 103.

$\alpha$  $\gamma$ -dimethyl  $\beta$  ethyl ether (BOEHRINGER & SOHNE), A., i, 102.

$\alpha$  $\beta$  dimethyl  $\gamma$ -propyl ether (BOEHRINGER & SOHNE) A., i, 103.

$\alpha$  $\gamma$ -dimethyl  $\beta$ -propyl ether (BOEHRINGER & SOHNE), A., i, 103.

$\beta$ -methyl  $\alpha$ -diethyl ether (BOEHRINGER & SOHNE), A., i, 103.

$\alpha$ -methyl  $\beta$ -diethyl ether (BOEHRINGER & SOHNE), A., i, 103.

$\beta$ -methyl  $\alpha$ -ethyl  $\gamma$ -propyl ether (BOEHRINGER & SOHNE), A., i, 103.

**Glyceryltryptophane**, and the hydrochloride of its ethyl ester (ABDERHALDEN and BAUMANN), A., i, 544.

**Glycidic acid**, preparation of esters of (DARZENS), A., i, 6.

**Glycine** (aminoacetic acid), formation of, in the animal body (FRIEDMANN and TACHAN), A., ii, 906.

origin of, in the animal body (RINGER), A., ii, 1116.

conversion of, into triglycolamic acid (SIEGFRIED), A., i, 774.

interaction of alloxan and (HURTLEY and WOOTTON), T., 288; P., 2.

complex chromium salt of (TSCHUGAEFF and SERBIN), A., i, 116.

action of mercuric chloride on (SIEGFRIED), A., i, 427.

oxidation of (DENIS), A., i, 616. in crab extract (BERLIN), A., ii, 516.

**Glycinedithiocarboxylic acid**, benzyl hydrogen ester and its barium salt (SIEGFRIED and WEIDENHAUPT), A., i, 116.

**Glycocholic acid** (LETSCHE), A., i, 784.

**Glycogen**, formation of, from formaldehyde in the liver (SCHONDORFF and GREBE), A., ii, 306; (GRUBE), A., ii, 410.

formation of, in the liver (MURSCHAUSER and HAFFMANS), A., ii, 414.

**Glycogen**, formation of, in the liver, influence of phloridzin on (SCHÖNDORFF and SÜCKROW), A., ii, 306.  
in the liver, relation of the kidney to (GRÜNWALD), A., ii, 130.  
distribution of, in the liver (MACLEOD and PEARCE), A., ii, 219.  
removal of, from the human subject (LUSK), A., ii, 215.  
behaviour of, in the frog's ovary (BLEIBTREU), A., ii, 811.  
effect of extirpation of the suprarenals on (KAHN and STARKENSTEIN), A., ii, 415.  
amount of, in yeast cultures (v. LEBEDEFF), A., ii, 519.

**Glycol**,  $C_9H_{11}O_2$ , from dimethylephedrine ammonium hydroxide, and its dibenzoate (SCHMIDT), A., i, 562.

**Glycols**, behaviour of, in the body (MIURA), A., ii, 1014.

**Glycollaldehyde**, bimolecular (McCLELLAND), T., 1827; P., 224.

**Glycollic acid**, alkaline cupric salts of (PICKERING), T., 1347; P., 192.  
yttrium salt (PRATT and JAMES), A., ii, 893.

**Glycolysis** (LÖB and PULVERMACHER), A., ii, 54; (RONA and DÖBLIN), A., ii, 619.  
influence of phosphates on (LÖB), A., ii, 504.

**Glycosuria**. See Diabetes.

**Glycuronic acid**, preparation of (JOLLES), A., i, 709.  
biological properties of (PADERI), A., ii, 629.  
limit of combination of, in rabbits (HÄMÄLAINEN and SJÖSTRÖM), A., ii, 309.  
derivative of, from the sugar beet (SMOLENSKI), A., ii, 428.  
reaction, importance of, in infants' urine (MAYERHOFER), A., ii, 311.  
detection of small quantities of (NEUBERG and SANHEYOSHI), A., ii, 1038.

**Glycyl-*dl*-, *d*-, and *l*- $\alpha$ -aminobutyric acid (ABDERHALDEN, CHANG, and WURM), A., i, 527.**

**1-Glycylbenzene-2-sulphinic acid**, 4-bromo- (CLAASZ), A., i, 437.

**Glycyrrhizin**, estimation of, in liquorice root (ERIKSSON), A., ii, 346.

**Glyoxalcarboxylic acid**, colloidal form of Nastvogel's osazone of (FENTON and WILKS), A., i, 324.

**Glyoxalines (iminazoles)**, synthesis of (WINDAUS and OPITZ), A., i, 752.  
formation of (EVEREST and McCOMBE), T., 1746; P., 209.

**Glyoxalines**, pharmacological action of halogen derivatives of (GUNDERMANN), A., ii, 754.

**Glyoxaline-4(or 5)-acetic acid** and its salts and ethyl ester (PYMAN), T., 680.

**Glyoxaline-4(or 5)-acet-thioamide** (PYMAN), T., 682.

**$\beta$ -Glyoxaline-4(or 5)-acrylic acid** and its salts (BARGER and EWINS), T., 2339; P., 305.

**Glyoxaline-4-carboxylic acid**, 5-nitro- (WINDAUS and OPITZ), A., i, 753.

**4(or 5)-Glyoxaline-ethyl methyl ketone** and its picrate (PYMAN), T., 2176; P., 275.

**4(or 5)-Glyoxalinemethylacetooacetic acid**, ethyl ester and its salts (PYMAN), T., 1392.

**4(or 5)-Glyoxalinemethylchloromalonamide** hydrochloride (PYMAN), T., 1401.

**4(or 5)-Glyoxalinemethylchloromalonic acid**, ethyl ester and its salts (PYMAN), T., 1393; P., 92.

**4(or 5)-Glyoxalinemethylmalonic acid**, and its ethyl ester and salts of the latter (PYMAN), T., 1390.

**4(or 5)-Glyoxalinemethylmethylacetooacetic acid**, ethyl ester and its salts (PYMAN), T., 1392.

**$\beta$ -Glyoxaline-4(or 5)-propiobetaine** and its salts (BARGER and EWINS), T., 2340; P., 305.

**$\alpha$ - $\beta$ -Glyoxaline-4(or 5)-propionic acid**,  $\alpha$ -chloro-, and  $\alpha$ -hydroxy- (PYMAN), T., 1394, 1400; P., 92.

**antiGlyoxime**, dichloro-, and its dibenzoyl derivative, iodo-, and di-iodo- (STEINKOPF and JÜRGENS), A., i, 531.

**Glyoximes**, compounds of cobalt and nickel with (TSCHUGAEFF), A., i, 261.  
substituted, anomalous molecular fraction of (TSCHUGAEFF and KOCH), A., ii, 829.

**Glyoxylic acid**, brucine salt (HILDITCH), T., 234.

**Gnoscopine** (*dl-narcotine*), synthesis and resolution of, and its salts and bromo-, chloro-, iodo-, and their salts (PERKIN and ROBINSON), T., 775; P., 101.

**Gold**, arc spectrum of (DUFFIELD), A., ii, 350.  
solution of, in aqua regia (PŘIWOZNÍK), A., ii, 484.  
brown (HANRIOT), A., ii, 118, 208, 258, 372; (HANRIOT and RAOULT), A., ii, 791.  
colloidal (GUTBIER), A., ii, 1098.

**Gold alloys** with copper and silver (JÄNECKE), A., ii, 1089.

**Gold alloys** with palladium, occlusion of hydrogen by (BERRY), T., 463 ; P., 56.  
 with sodium (MATHEWSON), A., ii, 732.  
 with tellurium (COSTE), A., ii, 405.  
**Gold tellurides** (PELLINI and QUERCIGH), A., ii, 45.  
 and silver telluride, new (GASTALDI), A., ii, 901.  
**Auric** hydroxide, formation of, on a gold anode (MIXTER), A., ii, 613.  
**Gold**, estimation of, quantitatively with ether (MYLIUS), A., ii, 444.  
 estimation of, in copper ores (LOEYV), A., ii, 338.  
**Goldschmidtite**, composition of (GASTALDI), A., ii, 901.  
**Gorgonic acid**, iodo-. See Tyrosine, di-iodo-.  
**Gout**, uric acid excretion in (MALLORY), A., ii, 219.  
**Grapes**, white, colouring matters of (DEZANI), A., ii, 223.  
**Graphite**, theory of the formation of (HEINISCH: HEYN), A., ii, 391.  
 formation of, in iron alloys (JERIOMIN), A., ii, 289.  
 alleged solution of, by decacyclene (PADOA), A., i, 362.  
 analysis of (MAYER), A., ii, 1029.  
**Greens**, arsenical, estimation of arsenic in (HEIDUSCHKA and REUSS), A., ii, 438.  
**Grignard reagents**, application of (DAVIES and KIPPING), T., 296 ; P., 39.  
 action of, on dihalogen compounds (v. BRAUN and SOBECKI), A., i, 701.  
**Guaiacol**, diethylaminoethyl carbonate hydrobromide of (EINHORN and ROTH-LAUF), A., i, 704.  
**Guaiacol**, 4- and 5-amino-, and their acetyl and benzoyl derivatives, and 4- and 5-chloro-, and their salts (JONA and POZZI), A., i, 854.  
**Guaiacol ethyl ether**, 5-chloro- (JONA and POZZI), A., i, 854.  
**Guaiaconic acid**, action of colloidal metals and haemoglobin derivatives on (BUCKMASTER), A., i, 390.  
**Guanidine**, acyl derivatives of (TRAUBE), A., i, 115.  
 amino-, diazo-compounds of (HOFMANN, HOCK, and KIRMREUTHER), A., i, 359.  
 cyano-, action of anilides on (OSTROGOVICH), A., i, 332.  
 action of nitriles on (OSTROGOVICH), A., i, 507.  
**Guanidines**, methylated (SCHENCK), A., i, 842.  
**δ-Guanidinovaleric acid** and its salts (ACKERMANN, ENGELAND, and KUTSCHER), A., i, 956.  
**Guanido-butylaminoagmatine** from ergot (ENGELAND and KUTSCHER), A., ii, 220.  
**Guanine** pentoside from molasses (ANDRLÍK), A., i, 397.  
 detection of, in tissues (DE GIACOMO), A., ii, 132.  
**Guanosine**, identity of vernine with (SCHULZE and TRIER), A., i, 155.  
**Guanylidiazoguanyltetrazen**, and its derivatives (HOFMANN, HOCK, and KIRMREUTHER), A., i, 359.  
**Guanyltetrazyltetrazen**, preparation of, and its periodide (HOFMANN and HOCK), A., i, 1047.  
**Guayule**, constituents of (ALEXANDER), A., i, 897.  
**Guignet's green**, constitution of (WÖHLER and BECKER), A., ii, 401.  
**Gum**, estimation of, in syrups (ROCQUES and SELLIER), A., ii, 775.  
**Gums**, reaction of, with sodium hydroxide (SOLLMANN), A., ii, 547.  
**Gum kino**, reactions of (SIMONSEN), T., 1530 ; P., 194.  
**Gun-cotton**, estimation of nitrates in (PELLET), A., ii, 930.  
**Gypsum**, action of, on nitrification (DEZANI), A., ii, 1019.  
**Gyrolone**, and chloro-, and their derivatives (GABRIEL), A., i, 229.  
**Gyrolone** (GABRIEL), A., i, 229.

## H

**Haematin**, properties of (SALKOWSKI), A., ii, 626.  
 use of, in qualitative analysis and in the volumetric estimation of bismuth (VASSALLO), A., ii, 1139.  
**Haematorphyrin**, occurrence of, in the meconium (BORRIEN), A., ii, 133.  
 sensitising action of (HAUSSMANN), A., ii, 138.  
**Hæmin dimethyl ether**, preparation of (KÜSTER), A., i, 95.  
**Hæmochromogen**, production of (MICHEL), A., i, 822.  
 pyridine compound of (KALMUS: v. ZEYNEK), A., i, 95.  
**Hæmoglobin**, peroxidase character of (BERTRAND and ROGOSIŃSKI), A., i, 248.  
 relation of urobilin to (SIMPSON), A., ii, 309.

**Hæmoglobin**, regeneration of, after hæmorrhage (BOYCOTT), A., ii, 1108.  
 derivatives, spectroscopy of (MICHEL), A., i, 823.  
 action of, on guaiacolic acid (BUCKMASTER), A., i, 390.  
 relation of, to inorganic catalysts (MADELUNG), A., i, 411.  
 detection of, in urine (McDERMOTT), A., ii, 674.

**Hæmolysins**, production of (SCHÄFER), A., ii, 996; (ATKIN), A., ii, 997.  
 and immunity (BROWNING and WILSON), A., ii, 997.

**Hæmolysis** by acetic acid and by ammonia (STADLER and KLEEMAN), A., ii, 996.  
 by alkalis (GROS), A., ii, 50.  
 produced by cocaine (PRIBRAM), A., ii, 125.

**Hæmophilia**, pathogenesis of hereditary (ADDIS), A., ii, 632.

**Halloysite**, composition of (THUGUTT), A., ii, 210; (STREMME), A., ii, 406.  
 colour reactions of (THUGUTT), A., ii, 501.

**Halochromy**, theory of (PFEIFFER, FRIEDMANN, GOLDBERG, PROS, and SCHWARZKOPF), A., i, 788.

**Halogens**, magneto-chemical researches on the atomic structure of the (PASCAL), A., ii, 367.  
 reactivity of the, in organic compounds (SENTER), T., 95; (SENTER and PORTER), T., 1049; P., 119.  
 absorption of, by dry slaked lime (WILKS), P., 308.  
 combination of, with finely divided silver (KASTLE), A., ii, 481.  
 estimation of (SANCHEZ), A., ii, 434.  
 estimation of, in benzene derivatives (MARYOTT), A., ii, 66.  
 estimation of, in lipoids (CAPPENBERG), A., ii, 927.  
 estimation of, in organic compounds (WALKER and MACRAE), A., ii, 484; (EMDE), A., ii, 532; (WARUNIS), A., ii, 927.  
 estimation and separation of the (DUTOIT and v. WEISSE), A., ii, 1130.

**Halogen acids**, compounds of, with benzene derivatives containing oxygen (MAASS and McINTOSH), A., i, 289.

**Halogen compounds**, reactivity of, towards metals (STAUDINGER, CLAR, and CZAKO), A., i, 624.

**Halogen salts**, estimation of (ROSENTHALER), A., ii, 668.

**Heart**, influence of ions on the action of the (MINES), A., ii, 130.  
 beat, temperature coefficient of the rate of the (ROGERS), A., ii, 503.  
 antagonism of cholesterol to the action of glucosides on the (KARAULOW), A., ii, 517.  
 action of barium salts on the (ROTHBERGER and WINTERBERG: WERSCHININ), A., ii, 1117.  
 action of calcium salts on the (ROTHBERGER and WINTERBERG), A., ii, 1117.  
 action of morphine on the (VAN EGMOND), A., ii, 755.  
 comparative action of strophanthin and digitoxin on the (RODOLICO), A., ii, 515.  
 frog's, action of tervalent ions on the (MINES), A., ii, 633.  
 isolated frog's, action ofaconitine on the (HARTUNG), A., ii, 1016.  
 man's and dog's, composition of the (LEDERER and STOLTE), A., ii, 906.

**Heat**. See under Thermochemistry.

**Helianthus annuus** (sunflower), constituents of (BUSCHMANN), A., ii, 324.

**Helium**, production of, by ionium (BOLTWOOD), A., ii, 359.  
 production of, by radium (BOLTWOOD and RUTHERFORD), A., ii, 953.  
 composition of minerals containing (LANGE), A., ii, 499.  
 presence of, in autunite (PIUTTI), A., ii, 565.  
 absorption of, by salts and minerals (PIUTTI), A., ii, 88.  
 liquid (ONNES), A., ii, 487, 575, 687.  
 experiments with (ONNES), A., ii, 853.

**Hemibilirubin** (FISCHER), A., i, 803.  
 and its oxidation products (FISCHER and MEYER), A., i, 1005.

**Hemipin-1- and -2-anilic acids**, 6-nitro-methyl esters (WEGSCHEIDER and KLEMENC), A., i, 541.

**Hemipinic acid**, derivative of (WEGSCHEIDER and KLEMENC), A., i, 541.

**Henbane**, extract of (DANCKWORTT), A., ii, 644.

**Hen's eggs**. See Eggs.

**Heptadeconitrile (cetyl cyanide)** (v. BRAUN and SOBECKI), A., i, 598.

**Heptadecyl- $\alpha$ - and  $\beta$ -naphthylamines** and their salts and derivatives (LE SUEUR), T., 828; P., 104.

**Heptaldehyde brucine sulphite** (MAYER), A., i, 223.

**3:2':4':5':2":4":5"-Heptamethoxytri-phenylmethane**, 4-hydroxy- (SZÉKI), A., i, 634.

**Heptan- $\delta$ -one- $\gamma\epsilon$ -tricarboxylic acid**, diethyl ester, semicarbazide of (STAUDINGER, BEREZA, and MODRZEJEWSKI), A., i, 306.

**Heptoic acid**, oxidation of, by permanganate (PRSCHEVALSKY), A., i, 947.

**Heptylbenzene,  $\eta$ -bromo-,  $\eta$ -chloro-, and  $\eta$ -iodo-** (v. BRAUN, DEUTSCH, and KRÜBER), A., i, 969.

**Herderite**, crystals of, from Auburn, Maine (FORD), A., ii, 1102.

**Heterocyclic compounds**, kinetics of the transformation of chloro-alkylamines into (FREUNDLICH and KRESTOVNIKOFF), A., ii, 266.

**Hetero-poly-acids** (ROSENHEIM and WEINHEBER), A., i, 109; (ROSENHEIM and PINSKER), A., i, 265; (ROSENHEIM and KOHN), A., ii, 116; (ROSENHEIM), A., ii, 612.

**$\Delta^{\alpha\alpha}$ -Hexadecadiene** (REFORMATSKY, GRISCHKEWITSCH - TROCHIMOWSKY, and SEMENZOFF), A., i, 597.

**$\Delta^{1,3}$ -cycloHexadiene and its tribromide** (ZELINSKY and GORSKY), A., i, 847.

**Hexahydroacetanilide**. See *cycloHexane*, acetyl derivative.

**Hexahydroacetophenone**. See *cycloHexyl methyl ketone*.

**Hexahydrobenzoylacetone** and its copper and sodium derivatives (GONCHOT), A., i, 134.

**1-Hexahydrobenzoyl-2-pentanone** and its derivatives (WALLACH and OST), A., i, 474.

**$\delta$ -Hexahydrobenzoyl-*n*-valeric acid** and its derivatives (WALLACH and OST), A., i, 473.

**Hexahydrobenzylamine**, preparation of (SABATIER and MAILHE), A., i, 627.

**Hexahydrobenzylaniline**, *o*-hydroxy-, (BORSCHE and SCHMIDT), A., i, 59.

**Hexahydrohippuric acid** and its derivatives (GONCHOT), A., i, 369.

**2:4:5:2':4':5'-Hexamethoxytriphenylmethane** (SZÉKI), A., i, 634.

**2':4':5':2":4":5"-Hexamethoxytriphenylmethane**, 3- and 4-nitro-, 2- and 4-hydroxy-, and 3:4-*dihydroxy*- (SZÉKI), A., i, 634.

**Hexamethylenediammonium iodide** (v. BRAUN), A., i, 612.

**Hexamethylbutylene- $\alpha\beta$ -diammonium hydroxide** and iodide (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 609.

**2:3:3:5:6:6-Hexamethyl-3:6-dihydro-pyrazine** and its salts (GABRIEL), A., i, 213.

**Hexamethylenetetramine**, compounds of, with metallic salts (BARBIERI and CALZOLARI), A., i, 184, 266, 268; (BARBIERI and LANZONI), A., i, 268.

**persulphates**, metallic (BARBIERI and CALZOLARI), A., ii, 889.

**estimation of, in urine** (SCHRÖTER), A., ii, 343.

**Hexamethylenetetraminediguaicol** (HOFFMANN-LA ROCHE & Co.), A., i, 127.

**Hexamethylethylenediammonium iodide** and platinichloride (SKRAUP and PHILIPPI), A., ii, 587.

**Hexamethylphloroglucinol**, compound of, with magnesium methyl iodide (HERZIG and ERTHAL), A., i, 778.

**Hexamethylpiperazine** and its salts and *dinitroso*- (GABRIEL), A., i, 213.

**Hexane**, catalytic decomposition of (IPATIEFF and DOWGELEWITSCH), A., i, 937.

preparation of halogen derivatives of,  $\alpha\delta$ -tribromo- (v. BRAUN and SOBECKI), A., i, 413.

**Hexane,  $l$ - $\beta$ -iodo-** (PICKARD and KENYON), T., 65.

**cycloHexane**, catalytic decomposition and isomerisation of (IPATIEFF and DOWGELEWITSCH), A., i, 937.

bromination of (BODROUX and TABOURY), A., i, 622.

acetyl derivative (*hexahydroacetanilide*) (GONCHOT), A., i, 134.

**cycloHexane-1-carboxylic acid**, 1-amino-, ethyl ester (ZELINSKY, ANNENKOFF, and KULIKOFF), A., i, 773.

**cycloHexane-1:1-diacetic acid** and its imide, anhydride, and other derivatives (THOLE and THORPE), T., 445.

**cycloHexane-1:1-diacetic acid,  $\alpha\alpha'$ -dicyano-**, derivatives of (GUARESCHI), A., i, 792.

**cycloHexane-1:1-dimalonic acid**, imide, di-imino-di-imide, and di-imide of, and their derivatives (THOLE and THORPE), T., 444, 447.

**$\alpha\beta$ -Hexanesuccinimide**,  $\alpha\beta$ -dicyano- (GUARESCHI), A., i, 793.

**cycloHexanol**, action of, with bromine and aluminium bromide (BODROUX and TABOURY), A., i, 779.

**cycloHexanone**, action of bromine and aluminium bromide on (BODROUX and TABOURY), A., i, 779.

action of hydrazine hydrate on (KIJNE and BELOFF), A., i, 678.

azine and nitrophenylhydrazones of (CIUSA), A., i, 931.

**cycloHexanones**, halogenides of (KOTZ and STEINHORST), A., i, 210.

**cycloHexanone-4-carboxylic acid**, oxime, molecular configuration of (EVEREST), P., 285.

**Hexaphenylethane** (WIELAND), A., i, 569.

**Hexaphenylsilicoethane** (KIPPING), P., 144; (SCHLENK, RENNING, and RACKY), A., i, 596.

**$\Delta^8$ -Hexene**,  $\alpha$ -iodo- (v. BRAUN and DEUTSCH), A., i, 938.

**cycloHexene**, a new (ZELINSKY), A., i, 958.

**$\Delta^1$ -cycloHexene**, bromo-, and its dibromide (ZELINSKY and GORSKY), A., i, 847.

1-chloro- (SKITA and RITTER), A., i, 272.

**cycloHexeneacetyl** chloride (DARZENS and ROST), A., i, 988.

**cycloHexenehexanol** and its derivatives (WALLACH, WACKER, and PAULY), A., i, 473.

**cycloHexenehexanone** and its derivatives (WALLACH, WACKER, and PAULY), A., i, 473.

**bicycloHexenehexylamine** (WALLACH, WACKER, and PAULY), A., i, 473.

**$\Delta^4$ -Hexenoic aldehyde** and its hydrazone (FRANZEN), A., ii, 525.

**$\Delta^8$ -Hexenyltrimethylammonium** iodide (v. BRAUN and DEUTSCH), A., i, 938.

**Hexoic acid**, oxidation of, with permanganate (PRSCHEVALSKY), A., i, 947.

$d$ -methylhexylcarbinyl ester of (HILDITCH), T., 222.

**isoHexoic acid**, *dl*- $\alpha$ -bromo-, ethyl ester and *dl*-, *d*-, and *l*- $\alpha$ -hydroxy-, and their derivatives (SCHEIBLER and WHEELER), A., i, 835.

**Hexosephosphoric acid** (v. LEBEDEFF), A., i, 837.

formed by yeast, composition of (YOUNG), A., i, 422.

**Hexoses**, colour reactions with (ALBERDA VAN EKENSTEIN and BLANKSMA), A., ii, 554.

**cycloHexoxycyclohexane** and its semicarbazone (DARZENS and ROST), A., i, 988.

**$\alpha$ -cycloHexylamino- $\alpha$ -phenyl- $\Delta^{\alpha}$ -hexen- $\delta$ -one** (ANDRÉ), A., i, 269.

**Hexylamino- $\alpha$ -phenyl- $\Delta^{\alpha}$ -penten- $\gamma$ -one** (ANDRÉ), A., i, 269.

**Hexylbenzene**,  $\zeta$ -bromo-,  $\zeta$ -chloro-, and  $\zeta$ -iodo- (v. BRAUN, DEUTSCH, and KRUBER), A., i, 969.

**n-Hexylene**, preparation of (VAN BERESTEYN), A., i, 761.

**$\beta$ -cycloHexyl-*d*-glucoside** and its tetra-acetyl derivative (FISCHER and HELFERICH), A., i, 802.

**2-cycloHexylcyclohexanol** and its phenylurethane (WALLACH and OSR), A., i, 473.

**cycloHexyl-2-cyclohexanone** and its derivatives (WALLACH and OST), A., i, 473.

**2-cycloHexyl- $\Delta^1$ -cyclohexene** and its nitrosochloride (WALLACH and OSR), A., i, 473.

**cycloHexylhydrazine** (KIJNER and BELOFF), A., i, 678.

**cycloHexylideneazine** (KIJNER and BELOFF), A., i, 678.

**cycloHexylidene-ethylene** (EGOROVA), A., i, 959.

**cycloHexylidenehydrazine hydrate** and its derivatives (KIJNER and BELOFF), A., i, 678.

**3-cycloHexyl-1-methylcyclohexan-3-ol** and its phenylurethane (MAILHE and MURAT), A., i, 127.

**3-cycloHexyl-1-methylcyclohexene** and its nitrosochloride (MAILHE and MURAT), A., i, 127.

**cycloHexyl methyl ketone**, oxidation of, and its oxime (GODCHOT), A., i, 134.

**3-cycloHexyl-1-methyl-4-isopropyl-3-cyclohexanol** (MURAT), A., i, 890.

**3-cycloHexyl-1-methyl-4-isopropylcyclohexene** (MURAT), A., i, 890.

***n*-Hexylisopropylcarbinol**, rotation of (PICKARD and KENYON), P., 324.

**cycloHexylthymomenthene** (MURAT), A., i, 891.

**$\gamma$ -cycloHexylthymomenthol** (MURAT), A., i, 891.

**Hinsdalite** (LARSEN and SCHALLER), A., ii, 1102.

**Hippopotamus**, bile of the (HAMMARSTEN), A., ii, 1010.

**Hippuric acid**, production of, in the animal body (RINGER), A., ii, 1116.

synthesis of, in the liver (FRIEDMANN and TACHAU), A., ii, 906.

**Histidine** in pig's thyreoglobulin (Koch), A., i, 407.

synthesis of (PYMAN), T., 1386; P., 206.

dipicrate (EWINS and PYMAN), T., 343.

**$\gamma$ -Histidine**, synthesis and resolution of, into its optically active forms, and their salts (PYMAN), T., 1395; P., 92, 206.

salts of (EWINS and PYMAN), T., 342.

**Hofmann's reaction** (MAUGUIN), A., i, 357.

**Holmium** (HOLMBERG), A., ii, 286.

**Homoantipyrine**. See 1-Phenyl-3-methyl-2-ethyl-pyrazolone.

**Homo-*o*-benzoquinone**. See 3:4-Toluquinone.

**isoHomo-o-benzoquinone.** See 2:3-Toluquinone.

**Homocautchouc.** See Dimethylcaoutchouc.

**Homocholine,** physiological action of (BERLIN), A., ii, 516.

**γ-Homocholine.** See Trimethylpropylammonium, hydroxy-, chloride.

**Homochromoisomerism** (HANTZSCH), A., i, 715.

**Homogentistic acid** and its derivatives (MÖRNER), A., i, 55.

**Homophthalic anhydride,** action of, magnesium organic compounds on (BAUER and WÖLZ), A., i, 871.

**Homosalicylic acid, hydroxy-.** See Toluic acid, dihydroxy-.

**Homoterpene,**  $C_{18}H_{30}$ , from homocautchouc (RICHARD), A., i, 733.

**Homoveratroylhomopiperonylamine** (PICTET and GAMS), A., i, 807.

**Honey,** chemistry of formation of (KÜSTENMACHER), A., ii, 127.

biological investigation of (MOREAU), A., ii, 326.

estimation of manganese in (GOTTFRIED), A., ii, 824.

identification and estimation of proteins in (MOREAU), A., ii, 347.

**Hops,** oil of, constituents of (SEMMLER and MAYER), A., i, 733.

humulene from (DEUSSEN), A., i, 549.

**Hordenine,** formation of, during the germination of barley (TORQUATE), A., ii, 523.

methochloride (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 629.

**Hormones,** function of, in regulating metabolism (ARMSTRONG and ARMSTRONG), A., ii, 642.

**Howlite** from California (EAKLE), A., ii, 901.

**Humic acid,** oxidation of (DOJARENKO), A., i, 357.

**Humin,** reaction of, with potassium hypobromite (KONSCHEGG), A., i, 18.

**Humulene,** from oil of hop flowers (DEUSSEN), A., i, 549.

**Hydantoin, 2-thio-** (WHEELER, NICOLET, and JOHNSON), A., i, 1031.

**Hydantoins** (WHEELER and HOFFMAN), A., i, 498; (WHEELER and BRAUTLECHT), A., i, 500; (JOHNSON and BRAUTLECHT), A., i, 813; (BRAUTLECHT), A., i, 922; (WHEELER, HOFFMAN, and JOHNSON), A., i, 923; (WHEELER, NICOLET, and JOHNSON), A., i, 1031.

**Hydnocarpus,** fats from (LENDRICH, KOCH, and SCHWARZ), A., ii, 1125.

**Hydrastine,** constitution of (RABE and McMILLAN), A., i, 77.

**Hydrastinine,** action of organo-magnesium compounds on (FREUND and LEDERER), A., i, 906.

salts, preparation of (DECKER), A., i, 906.

**Hydrates,** rôle of water in the formation of (FEYITS), A., ii, 1058.

determination of the vapour pressure of (PARTINGTON), P., 12; (FOOTE and SCHOLES), A., ii, 859.

**Hydration** values, determination of (WORLEY), T., 349; (GLOVER), T. 371.

**Hydrazides,** decomposition of, by heat (CHATTAWAY, CUMMING, and WILSDON), T., 1950; P., 193.

**Hydrazidines,** substituted, action of nitrous acid on (PONZIO and GASTALDI), A., i, 925.

**Hydrazine,** anhydrous, preparation of (HALE and SHETTERLEY), A., ii, 718.

oxidation of (HALE and NUNEZ), A., i, 845; (HALE and REDFIELD), A., ii, 929.

action of, on aldehydes and ketones (STAUDINGER and KUPFER), A., i, 751.

influence of, on the blood sugar content (UNDERHILL), A., ii, 910.

compounds of, with metallic salts (FRANZEN and LUCKING), A., ii, 285.

action of sulphur and its compounds on (EPHRAIM and PIOTROWSKI), A., ii, 275.

salts, behaviour of, with liquid ammonia (BROWNE and WELSH), A., ii, 1084; (BROWNE and HOULEHAN), A., ii, 1085.

**hydrate,** action of, on ethyl bromosuccinate (CURTIUS and GOCKEL), A., i, 401.

action of, on ethyl chloroacetate (CURTIUS and HUSSONG), A., i, 400.

action of, on *o*-diketones (CURTIUS and KASTNER), A., i, 324.

action of, on cyclohexanone (KIJNER and BELOFF), A., i, 678.

action of mercuric oxide on (HALE and NUNEZ), A., i, 845.

action of metallic sodium on (SCAN-DOLA), A., ii, 279.

action of, on sodamide (STOLLÉ), A., ii, 201.

precipitation of iron with (SCHIRM), A., ii, 937.

sulphate, action of, on nitrites (DEY and SEN), A., ii, 822.

**Hydrazines**, auto-reduction of (CHATTAWAY and ALDRIDGE), T., 404.  
oxidation and auto-reduction of (CHATTAWAY), A., i, 494.  
aromatic (WIELAND and WECKER), A., i, 82; (WIELAND), A., i, 569; (WIELAND and SÜSSER), A., i, 570.  
hydroxy-, preparation of derivatives of (WIELAND and FRESSEL), A., i, 495.

**Hydrazinecarboxylic acid**, methyl ester and its derivatives (DIELS and FRITZCHE), A., i, 957.

**Hydrazinedicarboxylic acid**, methyl ester (DIELS and FRITZCHE), A., i, 958.

**Hydrazinedisulphinic acid**, barium and hydrazine salts of (EPHRAIM and PIOTROWSKI), A., ii, 275.

**Hydrazinesulphonamide** (EPHRAIM and LASOCKI), A., ii, 276.

**Hydrazinesulphonic acid** (EPHRAIM and LASOCKI), A., ii, 276.

**Hydrazinodiacethyldiazide** hydrochloride (CURTIUS and HUSSONG), A., i, 400.

**Hydrazinodiacetic acid** (CURTIUS and HUSSONG), A., i, 401.

**Hydrazi-p-tolil** (p-toluoxy-p-tolylhydrazinomethylene) (CURTIUS and KASTNER), A., i, 325.

**Hydrazobenzene**, action of, with mixed aldehydes (RASSOW and BURMEISTER), A., i, 820.

**Hydrazobenzene**, 2:4:6:4'-tetranitro-, potassium salt of (CIUSA), A., i, 931.  
4:4'-nitronitroso- (GREEN and BEARDER), T., 1968; P., 229.

**Hydrazo-compounds** (RASSOW and BURMEISTER), A., i, 820; (RASSOW and BERGER), A., i, 821; (RASSOW and BECKER), A., i, 932.

**Hydrazoic acid**. See Azoimide.

**Hydrazones**, isomerism of (CIUSA and VECCHIOTTI), A., i, 810.  
decomposition of, by heat (CHATTAWAY, CUMMING, and WILSDON), T., 1950; P., 193.  
unsaturated, pyrazoline transformation of (BAUER and DIETERLE), A., i, 921.

**Hydrides**, liquid, dielectric constants of (PALMER and SCHLUNDT), A., ii, 458.

**Hydrindamine**, hydroxy-, and its salts (POPE and READ), T., 2079; P., 259.

**Hydrindantin** (RUHEMANN), T., 797; P., 97.  
formation of, and its analogues (RUHEMANN), T., 1306; P., 163.

**Hydrindene**, bromohydroxy- (POPE and READ), T., 2072.

**Hydrindene**, 1-chloro-, and 1-hydroxy-, methyl and ethyl ethers (WEISSGERBER and BREHME), A., i, 623.

**Hydrindene-2:2-dicarboxylic acid**, ethyl ester (THOLE and THORPE), T., 2186.

**β-Hydrindone**, preparation of, and its semicarbazone (THORPE), P., 128.

**1-Hydrindyl ether** (WEISSGERBER and BREHME), A., i, 624.

**Hydriodoquininecarboxylic acid**, ethyl ester (VEREINIGTE CHININFABRIKEN ZIMMER & Co.), A., i, 560.

**Hydroaromatic compounds** (AUWERS), A., i, 298, 383; (AUWERS and MÜLLER), A., i, 621; (BRITISH ASSOCIATION REPORTS), A., i, 725.  
bromination of (BODROUX and TABOURY), A., i, 533.  
hydrogenation of (SKWORZOW), A., i, 876.

**Hydrobenzoin**, *mm'*-dichloro- (LAW), T., 1115.

**Hydrobromic acid**. See under Bromine.

**Hydrobromoquininecarboxylic acid**, ethyl ester (VEREINIGTE CHININFABRIKEN ZIMMER & Co.), A., i, 559.

**Hydrocarbon**,  $C_4H_6$ , from cyclopropylcarbinol (MICHIELS), A., i, 64.  
 $C_8H_{12}$ , from polymerisation of butadiene (HARRIES and NERESHEIMER), A., i, 800.  
 $C_9H_{14}$ , from santene (KONDAKOFF), A., i, 999.  
 $C_{10}H_{16}$ , from polymerisation of isoprene (LEBEDEFF), A., i, 26.  
 $C_{10}H_{18}$ , from citralhydrazone (KIJNER), A., i, 1028.  
from  $\alpha$ -pinene (ZELINSKY), A., i, 997.  
from isopropylcyclopentan-3-one or from dihydropinolol, and its derivatives (WALLACH), A., i, 891.  
three isomeric, from thujane (KIJNER), A., i, 997.  
from thujene (KIJNER), A., i, 72.  
from xanthoxylene (SEMMLER and SCHLOSSBERGER), A., i, 1002.  
 $C_{10}H_{20}$ , from *Araucaria Cunninghamii* (BAKER and SMITH), A., i, 479.  
from citronellaldehydehydrazone and its derivatives (KIJNER), A., i, 1027.  
from dihydrothuja ketone (WALLACH and CHALLENGER), A., i, 472.  
from the polymerisation of isoprene (LEBEDEFF), A., i, 26.  
from thujane (KIJNER), A., i, 997.  
 $C_{11}H_{14}$ , from dimethylidioscoridine (GORTER), A., i, 561.

**Hydrocarbon**,  $C_{11}H_{14}$ , from  $\alpha$ -phenyl- $\Delta\alpha\gamma$ -butadiene, hydrogen bromide and zinc methyl (RIIBER), A., i, 979.  
 $C_{11}H_{20}$  and its tetrabromide from  $\beta$ -dibromo- $\beta$ -dimethylnonane (v. BRAUN and SOBECKI), A., i, 701.  
 $C_{12}H_{19}$ , from polymerisation of diisoprene (LEBEDEFF), A., i, 26.  
 $C_{12}H_{22}$ , from dimethylidipentene (RICHARD), A., i, 734.  
 $C_{12}H_{22}$ , from menthone and magnesium ethyl iodide (VANIN), A., i, 474.  
 $C_{12}H_{24}$ , from isoamyl iodide and acetic anhydride (VANIN), A., i, 416.  
 $C_{13}H_{22}$ , from halogen derivatives of 1-methyl-4-isopropyl-3-allylcyclohexan-3-ol (SAYTZEFF), A., i, 475.  
 $C_{17}H_{18}$ , from reduction of diphenylcyclobutylidinemethane (KIJNER), A., i, 44.  
 $C_{27}H_{46}$ , from cholestryl chloride and methyl alcohol (DIELS and BLUMBERG), A., i, 971.  
 $C_{29}H_{60}$ , from the oil of *Myrica gale*, (PICKLES), T., 1766; P., 220.  
 $C_{34}H_{26}$ , or  $C_{34}H_{30}$ , from reduction of benzanthrone (BALLY, SCHOLL, and LENTZ), A., i, 677.

**Hydrocarbons** from Roumanian petroleum (COSTACHESCU), A., i, 101.  
 synthesis of, at high temperatures (PRING and FAIRLIE), T., 1796; P., 217.  
 preparation of, by the catalytic decomposition of alkylidenedihydrazines (KIJNER), A., i, 679, 1027; (KIJNER and ZAVADOVSKY), A., i, 1028.  
 formation of, from carbon monoxide (VIGNON), A., i, 101.  
 spectra of combustion of (MEUNIER), A., ii, 679.  
 and their derivatives, absorption spectra, fluorescence and radio-luminescence of (STOBBE and EBERT), A., ii, 561, 562.  
 absorption of, by organic liquids (Mc DANIEL), A., i, 829.  
 aliphatic chlorinated, action of, on the organism (LEHMANN, BÉHR, QUADFLIEG, FRANZ, HERRMANN, KNOBLAUCH, GUNDERMANN, and WÜRTH), A., ii, 634.  
 aromatic, introduction of phthaloyl groups into (SCHOLL and NEUVIUS), A., i, 452; (SCHOLL and SEER), A., i, 453.  
 compounds of 3:5-dinitro-4-hydroxybenzoic acid with (MORGENSTERN), A., i, 976.  
 polynuclear aromatic, introduction of the carboxylic group into (LIEBERMANN and ZSUFFA), A., i, 202.

**Hydrocarbons**, cyclic unsaturated, isomerisation of (EGOROVA), A., i, 959.  
**Hydrocarbons**, ethylenic, polymerisation of, at high temperatures and pressures (ITATIEFF), A., i, 937.  
 action of hypochlorous acid on (UMNOVA), A., i, 249.  
 diethylenic, polymerisation of (LEBEDEFF), A., i, 26, 774; (EGOROVA), A., i, 959.  
 liquid, ionisation of (BIALOBJESKI), A., ii, 837.  
 paraffin, combustion of mixtures of, with air (BURGESS and WHEELER), T., 2013; P., 262.  
 unsaturated, preparation of sulphurous acid derivatives of (BADISCHE ANILIN- & SODA-FABRIK), A., i, 938.  
**Hydrocellulose** (JENTGEN), A., i, 115, 355; (SCHWALBE), A., i, 115, 712.  
**Hydrocephalic** fluid, chemistry of (POLÁNYI), A., ii, 746.  
**Hydrochloroquininecarboxylic** acid, ethyl ester (VEREINIGTE CHININFABRIKEN ZIMMER & Co.), A., i, 559.  
**Hydrochloroisquininecarboxylic** acid, ethyl ester (VEREINIGTE CHININFABRIKEN ZIMMER & Co.), A., i, 559.  
**Hydrocotarnine** hydriodide and methiodide (HOPE and ROBINSON), T., 2132.  
**Hydrocyanic acid.** See under Cyanogen.  
**Hydrofluoric acid.** See under Fluorine.  
**Hydrogels**, reactions in (HATSCHEK), A., ii, 378.  
**Hydrogen**, atomic weight of (HINRICHs), A., ii, 977.  
 canal-ray spectrum of (GEHRCKE and REICHENHEIM), A., ii, 166; (LUNKENHEIMER), A., ii, 950.  
 Doppler spectrum of canal rays in (STARK), A., ii, 568.  
 secondary spectrum of (PORLEZZA and NORZI), A., ii, 830; (PORLEZZA), A., ii, 949.  
 second spectrum of, in the extreme red (CROZE), A., ii, 558.  
 luminous absorption in (LADENBURG), A., ii, 83.  
 occlusion of, by the palladium-gold alloys (BERRY), T., 463; P., 56.  
 solubility of, in copper, iron and nickel (SIEVERTS), A., ii, 895.  
 solubility of, in tantalum and in tungsten (SIEVERTS and BERGNER), A., ii, 990.  
 oxidation of, by sulphuric acid (MILBAUER), A., ii, 872.  
 kinetics of the action of, on solutions of potassium permanganate (JUST and KAUKO), A., ii, 494.

**Hydrogen** and nitrogen, non-combination of, in the presence of nickel (NEOGI and ADHICĀRY), A., ii, 107. and nitrogen, compounds of, with lithium (DAFERT and MIKLAUZ), A., ii, 393. precipitation of metals from solutions of their salts by (IPATIEFF and WERKHOVSKY), A., ii, 716.

**Hydrogen** arsenide. See Arsenic trihydride.

bromide. See under Bromine.

boride. See Boron hydride.

chloride. See under Chlorine.

cyanide. See under Cyanogen.

fluoride. See Hydrofluoric acid under Fluorine.

peroxyde, formation of, in the arc discharge (MAKOWETZKY), A., ii, 463.

synthesis of, in the electrical discharge (BESSON : FISCHER, and WOLF), A., ii, 1082.

decomposition of, by light (TIAN), A., ii, 35.

decomposition of, by enzymes (WAENTIG and STECHE), A., i, 759.

catalysis of (RIESENFIELD), A., ii, 107.

catalytic decomposition of (SPITALSKY), A., ii, 36, 37.

enzymatic decomposition of (SENTER), A., ii, 995.

hydrolytic action of (NEUBERG and MIURA), A., i, 935.

action of, on bismuth salts (HANUŠ and KALLAUNER), A., ii, 404.

action of, on  $\alpha$ -diketones (BÓSEKEN, LICHTENBELL, MILO, and VAN MARLEN), A., i, 523.

oxidation of iodine by (AUGER), A., ii, 386.

action of, with manganese dioxide (BREDIG and MARCK), A., ii, 399.

action of, on thiobenzanilide (LEETE and BARNETT), P., 120.

detection of (V. SOBBE), A., ii, 926.

detection of small quantities of (LEUCHTER), A., ii, 1026.

estimation of the acidity of (WÖHLER and FREY), A., ii, 149.

sulphide, apparatus for generation of (HODGES), A., ii, 1084.

apparatus for production of large quantities of (GWIGGNER), A., ii, 877.

and water, equilibrium between (SCHEFFER), A., ii, 264, 870.

and methyl ether or methyl alcohol, fusibility curves of mixtures of (BAUME and PERROT), A., ii, 696.

**Hydrogen** sulphide, pyrogenic reactions of carbon dioxide with, and carbon disulphide (MEYER and SCHUSTER), A., ii, 721.

action of, on fulminic acid (CAMBI), A., i, 429.

action of, on sodium and potassium ethoxides (RULE), T., 558 ; P., 60.

influence of organic liquids on the interaction of, and sulphur dioxide (KLEIN), A., ii, 200.

in laboratory air (HABERMANN, KULKA, and HOMMA), A., ii, 315.

distribution of, in the laboratory and the use of aluminium stop-cocks (CAMPBELL), A., ii, 596.

generator for (HINDS), A., ii, 272.

tap for (WALTON), A., ii, 975.

persulphide, action of, with aldehydes (BLOCH, HÖHN, and BUGGE), A., i, 46 ; (BUGGE and BLOCH), A., i, 60.

**Hydrogen**, estimation of, volumetrically (BRUNCK), A., ii, 149.

active, estimation of, in organic compounds (ZEREWITINOFF), A., i, 101 ; (ODDO), A., ii, 826.

**Hydrogen** electrode. See Electrode under Electrochemistry.

**Hydrogen** ion, measurement of the concentration of the (RINGER), A., ii, 363.

**Hydrolysis**. See under Affinity, chemical.

**Hydronitric acid**. See Azomide.

**Hydropinenealdehyde**, preparation of (Houben and Doescher), A., i, 61.

**Hydropinenecarboxylic acid**, ethyl ester and derivatives of (Houben and Doescher), A., i, 61.

**Hydrosols**, adsorption of electrolytes by (LOTTERMOSER and MAFFIA), A., ii, 99 ; (OSTWALD), A., ii, 374.

*iso* **Hydrotoluoin** (LAW), T., 1116.

**Hydroxamic acids**, constitution of (PALAZZO), A., i, 428.

of the pyrone series (OLIVERI-MANDALÁ), A., i, 428.

**Hydroxamyl** chlorides (STEINKOPF and JÜRGENS), A., i, 530.

**Hydroxy-acids**, formation of, from amino-acids by moulds (EHRLICH and JACOBSEN), A., ii, 520.

aromatic, capillary rise of (SKRAUP and PHILIPPI), A., ii, 587.

esters of, action of thionyl chloride on, in presence of a tertiary base (DARZENS), A., i, 517.

optically active, and their esters, action of thionyl chloride and phosphorus pentachloride on (MCKENZIE and BARROW), T., 1910 ; P., 232.

**Hydroxyazo-compounds** (AUWERS, DANNEHL, and BOENNECKE), A., i, 168 ; (AUWERS and APITZ), A., i, 585.

**Hydroxy-compounds**, aliphatic, action of oxygen on, in the presence of copper (TRAUBE), A., i, 940.

aromatic, substitution in (HARDING), T., 1585 ; P., 213.

**o-Hydroxy-ketones**, compounds of, with tin tetrachloride (PFEIFFER, GOLDBERG, and KUNTNER), A., i, 899.

**Hydroxyl group**, estimation of the (DANIEL and NIERENSTEIN), A., i, 371.

**Hydroxylamine**, action of, on ketones (CIUSA and TEUNI), A., i, 918.

velocities of reaction of acetone and lutidone with (SCHÖTTLE), A., ii, 1079.

benzenesulphonate (SEYEWETZ and POIZAT), A., i, 360.

**o-Hydroxy-sulphides**, aromatic, action of sulphuric acid with (HILDITCH and SMILES), T., 973 ; P., 123.

**Hypaphorine**, constitution of (VAN ROMBURGH), A., i, 668.

identity of, with the betaine of tryptophan (VAN ROMBURGH and BARGER), T., 2068 ; P., 258.

**Hypericin** (ČERNÝ), A., i, 803.

**Hypericum**, colouring-matter from the flowers of (ČERNÝ), A., i, 803.

**Hyperthyroidism**, experimental (CARLSON, ROOKS, and MCKIE), A., ii, 217.

**Hypnotic** action and chemical constitution (REMFRY), T., 610 ; P., 72.

**Hypobromites**. See under Bromine.

**Hypocaffeine**. See 1:7:9-Trimethyl-spiro-5:5-hydantoin.

**Hypoethyltheobromine**. See 1:9-Dimethyl-7-ethylspiro-5:5-dihydantoin.

**Hypohalogenous acids** and hypohalogenites (SKRABAL), A., ii, 382.

**Hypoiodites**. See under Iodine.

**Hyposulphites**. See under Sulphur.

**Hysteresis**, chemical, of starches (RAKOWSKI), A., ii, 470.

**I.**

**Ilmenite** from Brazil (AZÉMA), A., ii, 407.

**Ilvaite**, constitution of (BASCHIERI), A., ii, 300.

**Imides**, velocity of addition of bromine to (PIUTRI and CALCAGNI), A., i, 124.

action of cotarnine on (KNOLL & Co.), A., i, 670.

**Imidisulphuric acid**, ammonium and silver salts of (EPHRAIM and PIOTROWSKY), A., ii, 274.

**Iminazoles**, complex (MELDOLA and KUNTZEN), T., 36.

**Iminazoles**. See also Glyoxalines.

**Imino-acids**, synthesis of pyrrole compounds from (JOHNSON and BENGIS), A., i, 564.

**Imino-compounds**, formation and reactions of (THOLE and THORPE), T., 422, 1684 ; P., 42, 219.

**Iminodiacetic acid**, and its metallic salts (SIEGFRIED), A., i, 427.

**β-Iminodibutyric acid**, methyl ester (FISCHER and SCHEIBLER), A., i, 527.

**Iminodicarboxylic acid**, cyano-, methyl ester, and ethyl ester, ammonium salt (DIELS and GOLLMANN), A., i, 956.

**Iminosulphides** (MATSU), A., i, 201.

**Immune substances**, origin of (McGOWAN), A., ii, 309.

passage of, into lymph, and the influence of the spleen on their formation (LUCKHARDT and BECHT), A., ii, 217, 812.

**Immunity and haemolysins** (BROWNING and WILSON), A., ii, 997.

**Incineration**, apparatus for (APS), A., ii, 149.

**Indanthren**, oxidation of (SCHOLL and EDLBACHER), A., i, 755.

dichloro- (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 504.

**Indazoles**, hydroxy- (FREUNDLER), A., i, 577, 753, 757, 815.

**o-Indazylbenzoic acid**, and 3-hydroxy-, hydrochloride (BAMBERGER), A., i, 694.

**Indene-1-carboxylic acid** (GRIGNARD and COURTOT), A., i, 193.

and its esters (WEISSGERBER, VOGEL, DOMBROWSKY, and KRAFT), A., i, 623.

**Indene series** (WEISSGERBER), A., i, 623.

**1-Indenol** (GRIGNARD and COURTOT), A., i, 193.

**Indenyl magnesium bromide** (GRIGNARD and COURTOT), A., i, 193.

**1-Indenylidiphenylcarbinol** (GRIGNARD and COURTOT), A., i, 193.

**tert.-1-Indenylfluorenol** (GRIGNARD and COURTOT), A., i, 193.

and its methyl ether (GRIGNARD and COURTOT), A., i, 538.

**Indican**, estimation of, in urine by a spectro-colorimetric method (KOZTOWSKI), A., ii, 553.

estimation of, in the presence of iodides (REICHARDT), A., ii, 554.

**Indicators**, behaviour of uranyl phosphates with (STARKENSTEIN), A., ii, 537.

of the methyl-red type (HOWARD and POPE), T., 1333 ; P., 206.

**Indigo dyeing**, theory of (BINZ and MANDOWSKY), A., i, 497.

**Indigotin**, preparation of, from indole (GESELLSCHAFT FÜR TEERVERWERTUNG), A., i, 497.  
 preparation of, in the laboratory, and as a lecture experiment (MICHEL), A., ii, 715.  
 preparation of halogen derivatives of (BADISCHE ANILIN- & SODA-FABRIK), A., i, 925.  
 condensation, negative case of (PISEKOVSKI), A., i, 577.  
 estimation of, in the presence of starch (THOMSON), A., ii, 346.

**Indigotin**, dichlorotetrabromo-, and pentachloro- (BADISCHE ANILIN- & SODA-FABRIK), A., i, 1081.

**Indigo-yellow**, preparation of (WUTH), A., i, 681.

**Indirubin**, constitution of (MAILLARD), A., i, 326; (WAHL and BAGARD), A., i, 577.  
 and bromo- (WAHL and BAGARD), A., i, 164.

**Indirubin-p-dimethylamino-2-anil** and its sulphate (PUMMERER and GÖTTLER), A., i, 232.

**Indium**, crystallographic relations of, and thallium (WALLACE), A., ii, 890.

**Indole**, formation of, by *Typhaceæ* (TELLE and HUBER), A., ii, 317.  
 formation of indigotin from (GESELLSCHAFT FÜR TEERVERWERTUNG), A., i, 497.  
 preparation of alkyl derivatives of (ODDO), A., i, 486.  
 behaviour of, in the organism (KAUFFMANN), A., ii, 420.  
 behaviour of, in rabbits (BLUMENTHAL and JACOBY), A., ii, 58.  
 and its derivatives, and its separation from coal tar (WEISSGERBER), A., i, 155.  
 detection of (TELLE and HUBER), A., ii, 317.  
 estimation of (SEIDELIN), A., ii, 553.

**Indole**, 2-iodo-, preparation of (OSWALD), A., i, 747.

**Indole group**, syntheses in the (ODDO and SESSA), A., i, 486.

**Indole-1-carboxylic acid** (ODDO and SESSA), A., i, 487.

**Indole-2-carboxylic acid**, ethyl ester (ODDO and SESSA), A., i, 488.

**1-Indolelactic acid** (EHRLICH and JACOBSEN), A., ii, 521.

**2:9-Indoloanthrone**, preparation and properties of (SCHOLL and v. WOLODKOWITSCH), A., i, 888.

**Indophenol**, preparation of halogen-substituted derivatives of (CASSELLA & Co.), A., i, 1025.

**Indoxyl**, action of carbonyl chloride on (GESELLSCHAFT FÜR CHEMISCHE INDUSTRIE IN BASEL), A., i, 675.

**Indoxylaceanthreneone** (LIEBERMANN and ZSUFFA), A., i, 387.

**Indoxyl-2-aldehyde**, derivatives of (FRIEDLÄNDER and KIELBASINSKI), A., i, 1022.

**Indoxylcarboxylic acid**, 7-chloro-5-bromo-, and 5:7-dichloro-, esters and salts of (BADISCHE ANILIN- & SODA-FABRIK), A., i, 156.

**3-Indyl-3-indolidenemethane perchlorate** (KÖNIG), A., i, 810.

**Inorganic compounds**, isomerism of (VOGE), A., ii, 977.  
 causes of the formation of colour in (REICHARD), A., ii, 561.  
 thermoelectric properties and thermal conductivity of various (KOENIGSBERGER and WEISS), A., ii, 578.

**Inosic acid** (LEVENE and JACOBS), A., i, 408.

**Inositol**, detection of (SALKOWSKI), A., ii, 73.

**Inositolphosphoric acid**, preparation of pure, and its physiological importance (STARKENSTEIN), A., ii, 132.

**Insanity**, esterase and nuclease content of serum in (PIGHINI), A., ii, 632.

**Insecticides** from coal-tar, action of, on green plants (MIRANDE), A., ii, 223.

**Insects**, fluorescent substance from (McDERMOTT), A., i, 396.

**Insoluble residues**, treatment of (EBLER), A., ii, 932.

**Intestinal putrefaction**, effect of copious water drinking on (HATTREM and HAWK), A., ii, 213.

**Intestinal juice**, enzymes of (LONDON and KRYM: AMANTEA), A., ii, 1000.  
 action of, on the digestive products of proteins (LONDON: LONDON and SOLOWEFF), A., ii, 1000.

**Intestine**, chemistry of the contents of the (BOEHM), A., ii, 749.  
 free amino-acids in the (ABDERHALDEN), A., ii, 1011.  
 action of sulphur in the (FRANKL), A., ii, 749.  
 small resected, metabolism with (UNDERHILL), A., ii, 214.

**Intramolecular transformations** (BUSCH and LIMPACH), A., i, 334; (DIMROTH and SCHNEIDER), A., ii, 31.

**Inulin**, micro-detection of (TUNMANN), A., ii, 159.

**Inulinase** from *Aspergillus niger* (BSELLI), A., ii, 1022.

**Invertase**, composition of (MATHEWS and GLENN), A., i, 409,

**Invertase**, pure, preparation of (EULER and KULLBERG), A., i, 825; (HERZOG), A., i, 1052.  
 decomposition of (EULER and KULLBERG), A., i, 409.  
 influence of acids on (STOWARD), A., i, 1052.  
 action of hydrogen ions on (MICHAELIS and DAVIDSOHN), A., i, 1052.  
 action of, on polysaccharides derived from laevulose (BOURQUELOT and BRIDEL), A., i, 512.  
 inhibition of the action of (ERIKSSON), A., i, 698.

**Invertebrates**, proteolytic enzymes of (SELLIER), A., ii, 1113.

**Invert-sugar**, behaviour of, in alkaline solution with hydrogen peroxide (JOLLES), A., i, 951.

**Iodic acid**. See under Iodine.

**Iodine**, atomic weight of (BAXTER), A., ii, 112.  
 resonance spectra of (WOOD), A., ii, 82.  
 resonance spectra of the vapour of (WOOD), A., ii, 950.  
 influence of helium on the spectrum of fluorescent (WOOD and FRANCK), A., ii, 170.  
 magneto-optical effects of (HEURUNG), A., ii, 963.  
 absorption of, by charcoal (CORRIDI), A., ii, 1083.  
 solutions, colour of (LEY and ENGELHARDT), A., ii, 951.  
 vapour, dissociation of (STARCK and BODENSTEIN), A., ii, 20.  
 action of light on (OWEN and PEALING), A., ii, 353.  
 destruction of the fluorescence of, by gases (WOOD: FRANCK and WOOD), A., ii, 169.  
 hydrolysis of (BRAY and CONNOLLY), A., ii, 864.  
 solubility equilibrium between, and organic substances (OLIVARI), A., ii, 592.  
 dissolved, velocity of solution of metals in (VAN NAME and BOSWORTH), A., ii, 973.  
 oxidation of, by hydrogen peroxide (AUGER), A., ii, 386.  
 liberation of, and bromine, from aqueous solutions (LABAT), A., ii, 653.  
 formation of derivatives of resorcinol and tannin (GÉRARD), A., i, 289.  
 reactivity of ketones towards (DAWSON and ARK), T., 1740; P., 223.  
 action of, on phenols and its application to their volumetric estimation (WILKIE), A., ii, 546.

**Iodine**, accumulation of, in tumour tissues (TAKEMURA), A., ii, 633.  
**Iodides**, estimation of (REICHARDT), A., ii, 554.  
 estimation of, in small quantities (BERNIER and PÉRON), A., ii, 435.

**Hypoiodites**, formation of, during iodine titrations (BATEY), A., ii, 436.

**Hypoiodite reaction**, influence of electrolytes on the velocity of the (SKRABAL), A., ii, 382.

**Iodic acid**, velocity of the reaction between sulphurous acid and (PATTERSON and FORSYTH), P., 320.  
 estimation of, in alcoholic solutions (FAVREL), A., ii, 150.  
 estimation of, in animal fluids (BERNIER and PÉRON), A., ii, 926.  
 estimation of, in the thyroid (SEIDELL), A., ii, 926.

**Iodo-acids**, fatty, behaviour of, in the organism (PONZIO), A., ii, 1015.

**Iodo-compounds**, organic, preparation of, from the corresponding chloro- and bromo-compounds (KNOLL & Co.), A., i, 432.

**Iodoform**, dimorphism of (BARDACH), A., i, 101.  
 oxidation of (PLOTNIKOFF), A., ii, 4, 452.  
 influence of, on phagocytosis (HAMBURGER, DE HAAN, and BUBANOVIC), A., ii, 504.

**Ionidine** and its salts (BRINDEJONC), A., i, 222.

**Ionisation**. See under Electrochemistry.

**Ionium**, period of (SODDY), A., ii, 6; (PIUTTI), A., ii, 565.  
 production of helium by (BOLTWOOD), A., ii, 359.  
 separation of, from residues (BOLTWOOD), A., ii, 359.

**Ions**. See under Electrochemistry.

**Ipecacuanha alkaloids** (KELLER), A., i, 1014.

*Ipomoea orizabensis*, constituents of the root of (POWER and ROGERSON), P., 304.

**Iridium**, electrical properties of (BRONIEWSKI and HACKSPILL), A., ii, 1055.  
 complex chlorides of (DELÉPINE), A., ii, 806.

**Iridotetrachloro-oxalic acid** and its metallic salts (DUFFOUR), A., i, 519.

**Irido-oxalic acid**, properties of, and its metallic salts (DUFFOUR), A., i, 519.

*Iris versicolor*, constituents of the rhizome of (POWER and SALWAY), A., ii, 143.

**Iron**, atomic weight of (BAXTER, THORVALDSON, and COBB), A., ii, 287; (BAXTER and THORVALDSON), A., ii, 288. are spectrum of (KAYSER), A., ii, 166. anode. See Anode under Electrochemistry. compounds of, in the potash-salt deposits (BOEKE), A., ii, 293. passivity of (DUNSTAN and HILL), T., 1853; P., 222. passivity of, influence of the magnetic field on the (BYERS and MORGAN), A., ii, 1057. porosity of, and its relation to passivity and corrosion (FRIEND), P., 311. solubility of carbon in (RUFF and GOECKE; RUFF), A., ii, 897. cementation of, by solid carbon (CHARPY and BONNEROT), A., ii, 1091. solubility of hydrogen in (SIEVERTS), A., ii, 895. rusting of (DUNSTAN and HILL), T., 1855; P., 221; (ANDSTRÖM), A., ii, 43; (FRIEND), A., ii, 401, 805; (JACOB and KAESBOHRER: ARNDT: DONATH), A., ii, 896. cause of the de-rusting of, in ferro-concrete (ROHLAND), A., ii, 1093. influence of impurities on the corrosion of (COBB), A., ii, 1092. action of water containing carbon dioxide on (CLOUS), A., ii, 206. action of steam on, at high temperatures (FRIEND, HULL, and BROWN), T., 969; P., 124. action of salt solutions and of sea-water on (FRIEND and BROWN), T., 1302; P., 156. catalytic synthesis of ammonia by means of (JELLINEK), A., ii, 798. valency of, in blood-pigment (KÜSTER), A., i, 409. galvanised, structure of (GUERTLER), A., ii, 898. metabolism. See Metabolism.

**Iron alloys**, formation of graphite in (JERIOMIN), A., ii, 289. with antimony (PORTEVIN), A., ii, 898. with carbon (RUER and ILJIN), A., ii, 494. with carbon, precipitation of carbon from (HATFIELD), A., ii, 401. estimation of carbon in (STAEDLER), A., ii, 538.

**Iron alloys** with carbon and chromium (ARNOLD and READ), A., ii, 1092. with chromium, resistance of, to acids (MONNARTZ), A., ii, 610. with copper, corrosion of, by sea water (JORISSEN), A., ii, 41. with molybdenum and vanadium, estimation of silicon in (TRAUTMANN), A., ii, 538. with silicon and carbon (GONTERMANN), A., ii, 1091. with titanium, analysis of, rich in silicon (TRAUTMANN), A., ii, 661.

**Iron group**, magnetisability of salts of metals of the (WEBER), A., ii, 1057.

**Iron salts**, catalytic action of (COLIN and SÉNÉCHAL: WOLFF and DE STOECKLIN), A., ii, 795. estimation of, in mineral waters (AGENO and GUICCIARDINI), A., ii, 769.

**Iron arsenide**, preparation of (HILPERT and DIECKMANN), A., ii, 985. boride (HOFFMANN), A., ii, 116. carbonate, isomorphous mixtures of, with calcium and magnesium carbonates (DIESEL), A., ii, 725. carbonyl, formation of (STOFFEL), A., ii, 986. magnetic susceptibility of (OXLEY), A., ii, 251. oxides, formation and reduction of (HILPERT and BEYER), A., ii, 729. sulphides, artificial production of (ALLEN), A., ii, 1093.

**Ferric salts**, oxidation of phenol by (COLIN and SÉNÉCHAL), A., ii, 872. estimation of, volumetrically (MÜLLER and WEGELIN), A., ii, 937. chloride, electrical conductivity of the system, and ammonium thiocyanate (BONGIOVANNI), A., ii, 1052. hydroxide, colloidal (DUMANSKI), A., ii, 610. adsorption of arsenic by (LOCKEMANN), A., ii, 485.

oxide, estimation of, in presence of alumina (KRIEGER), A., ii, 1034. rapid estimation of, in cement (GOLUBINZEFF), A., ii, 938. separation of, and alumina (BARBIER), A., ii, 70.

sulphate as a standard for titration of potassium permanganate (MILBAUER and QUADRAT), A., ii, 936.

**Iron :—**

Ferrous chloride, compounds of, with ammonia (GIRARDET), A., ii, 43.  
nitride, formation of (GIRARDET), A., ii, 43.  
new reaction for (CHARITSCHKOFF), A., ii, 543.  
salts, oxidation of (BASKERVILLE and STEVENSON), A., ii, 729.  
sulphide, formation of, in solutions (FELD), A., ii, 289.

**Iron organic compounds :—**

Ferric thiocyanate, compounds of, with organic bases (BARBIERI and PAMPANINI), A., i, 225.  
catalytic action of (COLIN and SÉNÉCHAL), A., i, 530.

**Ferricyanides**, detection of, in the presence of cyanides (GASTALDI), A., i, 186.

**Perferricyanides**, nature of (CAMBI), A., i, 430.

**Ferrocyanides**, isomerism of (BRIGGS), T., 1019; P., 24.  
organic constitution of (HARTLEY), T., 1549; P., 211.  
estimation of (RONNET), A., ii, 938.

**Iron :—**

**Cast iron**, crystallisation of white (BENEDICKS), A., ii, 728.  
growth of, after repeated heatings (CARPENTER), A., ii, 1091.  
influence of vanadium on the physical properties of (HATFIELD), A., ii, 1092.

**Steel**, from Greenland, constituents of (BENEDICKS), A., ii, 287.

etching of (ROBIN and GARTNER), A., ii, 495.

recovery of hammered (GUILLET), A., ii, 97.

influence of temperature on the magnetic properties of (MOIR), A., ii, 791.

development of heat in (ARNOLD), A., ii, 728.

gas contained in (CHARPY and BONNEROT), A., ii, 609.

influence of manganese on the properties of (LANG), A., ii, 206.

influence of nitrogen in the hardening of (KIRNER), A., ii, 494.

influence of 0·2% vanadium on (McWILLIAM and BARNES), A., ii, 1092.

hypereutectoid, influence of thermal treatment on the properties and structure of (JUNG), A., ii, 898.

martensite and pearlite, structure of (OKNOFF), A., ii, 986.

pearlitic, structure of (OKNOFF), A., ii, 495.

**Iron :—**

Steel, detection of chromium in (STANĚK), A., ii, 443.

estimation of carbon in (MAHLER and GOUTAL; DE NOLLY), A., ii, 937; (AUGUSTIN), A., ii, 1029.

estimation of chromium in (WDOWISZEWSKI and BOGOLUBOFF), A., ii, 157.

estimation of chromium, tungsten and phosphoric acid in (HINRICHSEN and DIECKMANN), A., ii, 156.

estimation of manganese in (KAYSER), A., ii, 70.

estimation of nickel in (RAULIN), A., ii, 1034.

volumetric estimation of sulphur in (ELLIOT), A., ii, 1131.

apparatus for estimating sulphur in (WENNMANN), A., ii, 938.

estimation of sulphur and carbon in (WENNMANN), A., ii, 1026.

See also Chromium steel and Nickel steel.

**Iron (in general), detection, estimation and separation :—**

precipitation of, with hydrazine hydrate (SCHIRM), A., ii, 937.

estimation of, colorimetrically (LACHS and FRIEDENTHAL), A., ii, 542.

estimation of small quantities of, in organic compounds (JAHN), A., ii, 1138.

estimation of, volumetrically, in the presence of titanic salts (KNECHT and HIBBERT), A., ii, 544.

estimation of carbon in (AUGUSTIN), A., ii, 1029.

apparatus for estimating carbon in (BUTZBACH and FENNER), A., ii, 937.

estimation of ferrous, in silicates (DIRTRICH), A., ii, 543.

estimation of phosphorus in, without separation of silicon (MÜLLER), A., ii, 1132.

containing graphite, estimation of silicon in (REICHARD), A., ii, 929.

estimation of sulphur in (ELLIOT), A., ii, 1131.

estimation of sulphur and carbon in (WENNMANN), A., ii, 1026.

apparatus for estimation of sulphur in (WENNMANN), A., ii, 653, 938; (JABOULAY), A., ii, 654.

analyses of the rust of (DONATH and INDRA), A., ii, 805.

estimation of, in urine (REICH), A., ii, 1013.

estimation of, in water (SÜPFLE), A., ii, 940.

**Iron (in general), detection, estimation and separation:—**

and vanadium, estimation of, volumetrically (MÜLLER and DIEFENTHÄLER), A., ii, 824.

separation of, from aluminium (CHARITSCHKOFF), A., ii, 543.

separation of, chromium and aluminium (TCHARVIANI and WUNDER), A., ii, 156; (SCHIRM), A., ii, 936.

quantitative separation of manganese and (SANCHEZ), A., ii, 1138.

separation of vanadium and (DEISS and LEYSAHT), A., ii, 939.

**Isatin, tautomerism of (PALAZZO and SCESI), A., i, 486.**

oxidation of amino-acids by (TRAUBE), A., i, 960.

phenylhydrazone of (AUWERS and BOENNECKE), A., i, 588.

**Isatin-2-anil, desmotropism of (PUMMERER and GRUBE), A., i, 231.****Isatin-2-methylanilide (PUMMERER and GRUBE), A., i, 231.****Isatoacetic acid, 6-chloro- (BADISCHE ANILIN- & SODA-FABRIK), A., i, 539.****Isatoic anhydride, 6-chloro- (BADISCHE ANILIN- & SODA-FABRIK), A., i, 540.****Isomerism, theory of (BALY), A., ii, 451. and polymorphism (BILLMANN), A., i, 367, 963; (CIUSA and VECCHIOTTI), A., i, 810; (STOBBE), A., ii, 970.**

of inorganic compounds (VOGE), A., ii, 977.

**Isoprene, synthesis of (HARRIES), A., i, 798.**

production of, by the decomposition of terpenes (HARRIES and GOTTLÖB), A., i, 798.

preparation of, from terpenes (STAUDINGER and KLEVER), A., i, 731.

compound of, with sulphurous acid (BADISCHE ANILIN- & SODA-FABRIK), A., i, 939.

**Isoprene-caoutchouc, "normal" and "sodium" and their derivatives (HARRIES and NERESHEIMER), A., i, 800.****J.****Jamesonite, composition of (SCHALLER), A., ii, 209.****K.****"Kalk stickstoff," analysis of (DINSLAGE), A., ii, 1027.**

See also Calcium cyanamide.

**Kaolinite, formation of, in coal-measure shales (BURTON), A., ii, 735.**  
constitution of (MELLOR and HOLD-CROFT), A., ii, 607.

**Kephir formation, chemistry of (GINZBERG), A., ii, 140.**

**Keratin of birds, sulphur and cystine in the (BUCHTALA), A., i, 97.**  
decomposition product of, giving Millon's reaction (GORTNER), A., i, 697.

**Kermek. See *Statice gmelini*.**

**Ketazines, stability of the nitrogen linking in (WIELAND and ROSEEU), A., i, 571.**

**Ketens (STAUDINGER and JELAGIN), A., i, 215; (STAUDINGER), A., i, 306, 307, 308, 650; (STAUDINGER and BEREZA), A., i, 459; (STAUDINGER and RUŽIČKA), A., i, 462; (STAUDINGER, CLAR, and CZAKO), A., i, 624; (STAUDINGER and CLAR), A., i, 638; (STAUDINGER and OTT), A., i, 639; (STAUDINGER and KUPFER), A., i, 641; (STAUDINGER and KON), A., i, 876.**

**Keto-alcohols, preparation of (DIELS and JOHLIN), A., i, 254.**

**α-Keto-alcohols, secondary, synthesis of (GAUTHIER), A., i, 415.**  
tertiary, synthesis of (GAUTHIER), A., i, 513.

**α-Keto-γ-acetoxyvaleric acid (WOHL and MAAG), A., i, 13.**

**α-Keto-β-benzoylanilino-αβ-diphenylethane (EVEREST and McCOMBIE), T., 1748.**

**4(or 5)-Ketobutylglyoxaline.** See 4(or 5)-Glyoxaline-ethyl methyl ketone.

**Ketochlorides, aromatic, action of metals on (NORRIS, THOMAS, and BROWN), A., i, 31.**

**2-Keto-1:2'-coumarancoumarone and its hydrobromide (FRIES and PFAFFENDORF), A., i, 149.**

**3-Keto-2:5-di-isobutyltetrahydrofuran (DUPONT), A., i, 805.**

**2-Keto-Δ<sup>1:2</sup>-dicoumaran and its derivatives (FRIES and PFAFFENDORF), A., i, 150.**

**β-Keto-δδ-dietethoxy-αγγ-tetramethylvaleric acid, ethyl ester (SHDANOVITSCH), A., i, 10.**

**3-Keto-2-p-dimethylaminocoumaran (FRIES and HASSELBACH), A., i, 151.**

**2-Keto-5:5'-dimethyl-Δ<sup>1:2</sup>-dicoumaran and its derivatives (FRIES and PFAFFENDORF), A., i, 150.**

**3-Keto-2:5-dimethyl-2:5-diethyltetrahydrofuran and its semicarbazone (DUPONT), A., i, 805.**

**3-Keto-2:2-dimethyl-2:3-dihydropyrrole-5-o-benzoic acid**, and its salts and 4-bromo-, 4-nitro-, 4-nitroso-, and 1:4-dinitroso-, and their derivatives (GABRIEL), A., i, 227.

**3-Keto-2:5-dimethyltetrahydrofuran** and its derivatives (DUPONT), A., i, 805.

**3-Keto-2:5-dipentamethylenetetrahydrofuran** and its semicarbazone (DUPONT), A., i, 805.

**5-Keto-2:3-diphenyl-2:5-dihydrofuran-2-acetic acid** and its ethyl ester (BESCHKE, WINOGRAD-FINKEL, and KÖHRES), A., i, 874.

**5-Keto-2:3-diphenyl-2:5-dihydrofuran-2-iodoacetic acid** (BESCHKE, WINOGRAD-FINKEL and KÖHRES), A., i, 874.

**5-Keto-2:3-diphenyltetrahydrofuran-2-acetic acid**, 3-hydroxy-, and its ethyl ester (BESCHKE, WINOGRAD-FINKEL, and KÖHRES), A., i, 873.

**2-Keto-1:5-diphenyl-1:2:3:6-tetrahydro-1:3:4-triazine** (BUSCH and HEFELE), A., i, 583.

**4-Keto-5-ethoxy-3-ethylhydroapocamphoric acid**, methyl ester (KOMPPA and ROUTALA), A., i, 382.

**3-Keto-6-ethylthiol-(1)-thionaphthen** and its nitroso-derivative (KALLE & Co.), A., i, 666.

**3-Keto-6-ethylthiol-(1)-thionaphthen-2-carboxylic acid** (KALLE & Co.), A., i, 667.

**$\alpha$ -Keto- $\beta$ -formylaniline- $\alpha\beta$ -diphenyl-ethane** (EVEREST and McCOMBIE), T., 1750.

**$\alpha$ -Ketoglutaric acid**, ethyl ester and derivatives of (BLAISE and GAULT), A., i, 520.  
diethyl ester and phenylhydrazone of (WISLICENUS and WALDMÜLLER), A., i, 603.

**$\gamma$ -Keto- $\alpha\alpha\beta\beta\delta\delta$ -hexamethyladipic acid**, ethyl ester (SHDANOVITSCH), A., i, 10.

**Ketols.** See Keto-alcohols.

**3-Keto-5-, and -6-methoxy-(1)-thionaphthens** (KALLE & Co.), A., i, 666.

**3-Keto-5-, and -6-methoxy-(1)-thionaphthen-2-carboxylic acids** and their nitroso-derivatives (KALLE & Co.), A., i, 666.

**$\gamma$ -Keto- $\alpha'$ -methylglutaric acid** and its ethyl ester and their derivatives (BLAISE and GAULT), A., i, 520.

**2-Keto-3-methylimino-5-phenylpyrrolidine hydrochloride and picrate** (MÜMM and MÜNCHMEYER), A., i, 80.

**4-Keto-7-methyltetrahydrohexathiazole-5-carboxylic acid**, 2-amino-, ethyl ester (JOHNSON and HILL), A., i, 502.

**3-Keto-5-methylthiol-(1)-thionaphthen** and its nitroso-derivative (KALLE & Co.), A., i, 667.

**3-Keto-5-methylthiol-(1)-thionaphthen-2-carboxylic acid** (KALLE & Co.), A., i, 667.

**$\delta$ -Keto- $\beta$ -methylvaleronitrile** and its amide (WOHL and MAAG), A., i, 25.

**Ketone**,  $C_{11}H_{20}O$ , from oxidation of trihydroxyphytane, and its derivatives (WILLSTÄTTER, MEYER, and HÜNI), A., i, 148.

$C_{13}H_{26}O$ , from oxidation of  $\beta$ -phytol, and its derivatives (WILLSTÄTTER, MEYER, and HÜNI), A., i, 148.

$C_{15}H_{30}O$ , from oxidation of  $\alpha$ -phytol, and its derivatives (WILLSTÄTTER, MEYER, and HÜNI), A., i, 147.

$C_{21}H_{22}O_3$ , from 4:6-dimethylcoumarin and sodium ethoxide, and its derivatives (FRIES and VOLK), A., i, 205.

**Ketone formation**, relation of muscular work to (PRETI), A., ii, 628.

**Ketones**, preparation of, from toluic acid (SENDERENS), A., i, 134.  
from phenylpropionic acid (SENDERENS), A., i, 302.  
of higher fatty acids, preparation of (EASTERFIELD and TAYLOR), T., 229 ; P., 279.

compounds of, with unsaturated acids (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), A., i, 107.

action of ethyl chlorocarbonate on sodium derivatives of (HALLER and BAUER), A., i, 299.

action of hydrazine on (STAUDINGER and KUPFER), A., i, 751.

action of hydroxylamine on (CIUSA and TERNI), A., i, 918.

reactivity of, towards iodine (DAWSON and ARK), T., 1740 ; P., 223.

catalytic reduction of (SKITA and RITTER), A., i, 71.

action of, and sodamide (HALLER and BAUER), A., i, 726.

action of, on the sodium derivative of phenylacetonitrile (BODROUX), A., i, 545.

acetylenic, combination of, with amines (ANDRÉ), A., i, 268.

halogenated alicyclic (KÖTZ and STEINHORST), A., i, 210.

hydroaromatic (CROSSEY and RENOUF), T., 1101 ; P., 137.

synthesis of (DARZENS and ROST), A., i, 988.

chloro-derivatives of (AUWERS), A., i, 383.

unsaturated, optical properties of (GETMAN), A., ii, 677.

explanation of the reactions of, by polarity (DERICK), A., ii, 712.

**Ketonic acids**, dibasic, preparation of (BLAISE and GAULT), A., i, 520, 664.

**$\alpha$ -Ketonic acids**, behaviour of, in animals (KNOOP and KERTESS), A., ii, 514.

**$\delta$ -Ketonic acids**, unsaturated (KOHLER), A., i, 984.

**$\alpha$ -Ketonic esters**, lactonisation of (GAULT), A., i, 709.

**3-Keto-2- $\alpha$ -nitrobenzylidene-thionaphthen** (NOELTING and STEUER), A., i, 165.

**4-Keto-2-phenyl-1-methyl-3:4-dihydro-quinolium hydroxide**, salts of (KAUFMANN and PLÀ Y JANINI), A., i, 916.

**4-Keto-1-phenyl-3-methyl-5-pyrazolone**, derivatives of (AUWERS, DANNEHL, and BOENNECKE), A., i, 171.

**2-Keto-5-phenyl-1- $\rho$ -tolylidihydro-1:3:4-triazine** (BUSCH and HEFELE), A., i, 583.

**Ketopinic acid**, constitution of (KOMPPA), A., i, 642.

**$\epsilon$ -Ketostearic acid** (BOUGAULT and CHARAUX), A., i, 949.

**3-Keto-2:2:5:5-tetraethyltetrahydrofuran** (DUPONT), A., i, 805.

**3-Keto-2:2:5:5-tetramethyltetrahydrofuran** and its derivatives (DUPONT), A., i, 554.

**3-Keto-(1)-thionaphthen**, 5- and 6-amino- (KALLE & Co.), A., i, 1010.

**3-Keto-(1)-thionaphthen-2-carboxylic acid**, 5- and 6-amino- (KALLE & Co.), A., i, 1010.

**$\gamma$ -Keto- $\alpha\beta\beta$ -trimethylvaleric acid**, ethyl ester, and its semicarbazone (LOCQUIN), A., i, 792.

**$\alpha$ -Keto- $\gamma$ -valerolactone- $\gamma$ -carboxylic acid**, ethyl ester, and its derivatives (GAULT), A., i, 709.

**Ketoximes**, preparation of (LAPWORTH and STEELE), T., 1884.

**Kidneys**, constituents of (BEBESCHIN), A., ii, 748.

work of the (TANGL), A., ii, 748.

concentration by the (LICHTWITZ; FREY), A., ii, 511.

relation of the, to the glycogen of the liver (GRÜNWALD), A., ii, 130.

excretion of starch by the (VOIGT), A., ii, 1116.

**Kinetics and Kinetic theory**. See under Affinity, chemical.

**Kino methyl ether** (SIMONSEN), T., 1532.

**Kirchhoff's equation**, application of, to solutions (HARDMAN and PARTINGTON), T., 1769; P., 221.

**Krypton**, ratio of, to argon, in natural gaseous mixtures (MOUREU and LEPAPE), A., ii, 392.

estimation of, by spectro-photochemical means (MOUREU and LEPAPE), A., ii, 439.

**Kumiss** formation, chemistry of (GINZBERG), A., ii, 140.

**L.**

**Laboratory**, hydrogen sulphide in the air of the (HABERMANN, KULKA, and HOMMA), A., ii, 315.

**Laboratory methods** (MURMANN), A., ii, 539.

**Lactarinic acid** (BOUGAULT and CHARAUX), A., i, 949.

isolation of, and its derivatives (BOUGAULT and CHARAUX), A., i, 835.

**Lactic acid**, formation of, during fermentation (MESTREZAT), A., ii, 421. produced by *Bacillus Bulgaricus* (CURRIE), A., ii, 1018.

optically active modifications of (HERZOG and SLANSKY), A., i, 764.

production of, by moulds (SAITO), A., ii, 321.

action of ultra-violet light on (LANDAU), A., i, 515; (EULER), A., ii, 452.

influence of inhalation of oxygen on, produced by hard work (FELDMAN and HILL), A., ii, 738.

optical behaviour of, in meat-juice (SALKOWSKI), A., i, 6.

action of, on casein (VAN DAM), A., i, 91, 407.

action of, on cardiac muscle (BURRIDGE), A., ii, 750.

action of, on starch and dextrin (ORECHSNER DE CONINCK and RAYNAUD), A., i, 771.

analysis of (KLAPPROTH), A., ii, 1038; (BESSON), A., ii, 1140.

and its anhydride, estimation of (ELVOVE: BESSON), A., ii, 160.

estimation of, by means of pyrrole (SOBOLEWA and ZALEWSKI), A., ii, 76.

estimation of, in blood (FRIES), A., ii, 994.

**Lactone**,  $C_{22}H_{18}O_2$ , from phenylpropionic acid and benzophenone (PATERNÒ and CHIEFFI), A., i, 65.

**Lactones** as fish poisons (PRIESS), A., ii, 638.

**Lactophenin**. See 4-Ethoxylactanilide.

**Lactose**, production of, in the mammary gland (PATON and CATHCART), A., ii, 415.

estimation of, polarimetrically (RICHMOND), A., ii, 73.

estimation of, in milk (VITOUX), A., ii, 74; (JONA), A., ii, 234.

estimation of, in the presence of other sugars (BAKER and HULTON), A., ii, 74.

**Lacto- $p$ -toluidide**, 3-nitro-, 3:5-dinitro-, and nitrate of the latter (ELBS and SCHUSTER), A., i, 192.

**Lævulic acid**, formation of, from glucosamine, chitin and chitose (HAM-BURGER), A., i, 834.

electrolytic reduction of (TAFEL and EMMERT), A., i, 764.

brucine salt (HILDITCH), T., 235.

**Lævulose**, proportion of, to dextrose in preserved fruits (FAVREL and GARNIER), A., ii, 1036.

densities of solutions of (LING, EYNON, and LANE), A., i, 355.

the influence of inactive substances on the rotation of (WENDER), A., i, 114.

selective power of vegetable cells for (LINDET), A., ii, 422.

**Lævulosephosphoric acid**, calcium salt (NEUBERG and KRETSCHMER), A., i, 837.

**Lævulosuria** (ADLER), A., ii, 311.

**Lakes**, constitution of (PFEIFFER, (GOLDBERG, and KUNTNER), A., i, 899.

**Lamp-black**, electrophoresis of (SPRING), A., ii, 15; (REYCHLER), A., ii, 250.

**Lampyridæ**, photogenic material of (MCDERMOTT), A., ii, 1113.

**Language**, universal chemical (OSTWALD), A., ii, 267.

**Lanthanum**, resolution of the spectral lines of, in the magnetic field (RYBÁR), A., ii, 1042.

rubidium acid nitrate (JANTSCH and WIGDOROW), A., ii, 114.

thallous nitrate (JANTSCH and WIGDOROW), A., ii, 114.

sulphate, double salts of, with alkali sulphates (BARRE), A., ii, 42.

disulphide (BILTZ), A., ii, 891.

*Lasiosiphon Meissnerianus*, chemical examination of the root of (ROGERSON), A., ii, 325.

**Laumontite** (SMITH), A., ii, 501.

**Lauric acid**, ammonium salt (FALCIOLA), A., i, 175.

**Lauric acid**,  $\alpha$ -amino-, synthesis of dipeptides of (HOPWOOD and WEIZMANN), T., 571; P., 55.

**Laurolene**, constitution of (BREDT), A., i, 417.

*isoLaurolene* (KONDAKOFF and SCHINDELMEISER), A., i, 998.

**Lauronic acid**, amino-, derivatives of (WEIR), T., 1270; P., 154.

**Lauronolic acid**, constitution of (BREDT and MARRES), A., i, 416..

**Lauryl chloride**,  $\alpha$ -bromo- (HOPWOOD and WEIZMANN), T., 572; P., 55.

**Laurylalanine**,  $\alpha$ -amino-, and  $\alpha$ -bromo- (HOPWOOD and WEIZMANN), T., 573.

**Laurylasparagine**,  $\alpha$ -amino-, and  $\alpha$ -bromo- (HOPWOOD and WEIZMANN), T., 575.

**Laurylglycine**,  $\alpha$ -amino-, and  $\alpha$ -bromo- (HOPWOOD and WEIZMANN), T., 572; P., 55.

**Lauryl-leucine**,  $\alpha$ -amino-, and  $\alpha$ -bromo- (HOPWOOD and WEIZMANN), T., 574.

**Laurylvaline**,  $\alpha$ -amino-, and  $\alpha$ -bromo- (HOPWOOD and WEIZMANN), T., 574.

**Law of definite proportions**, illustration of the (KASTLE), A., ii, 481.

**Lead**, band spectrum of (LAMPRECHT), A., ii, 831.

electro-deposition of (MATHERS), A., ii, 113.

association of, with uranium in minerals (HOLMES), A., ii, 570.

ratio of, to uranium in minerals, and its application to measurement of geological time (ZAMBONINI), A., ii, 939.

the system, silver, tin and (PARRAVANO), A., ii, 281.

silver and zinc, equilibrium in the system (KREMAN and HOFMEIER), A., ii, 884.

and silver halogen salts, ternary systems of (MATTHES), A., ii, 476.

dielectric constants of the halogen compounds of (LENERT), A., ii, 178.

action of *Allium sativum* juice on (BANERJEE), P., 234.

action of seltzer water on (BARILLÉ), A., ii, 889.

**Lead alloys** with calcium (BAAR), A., ii, 611.

with silver and zinc, potential of (KREMAN and HOFMEIER), A., ii, 848.

with tin (MAZZOTTO), A., ii, 889.

with tin and antimony (LOEBE), A., ii, 204.

with zinc and tin (LEVI-MALVANO and CECCARELLI), A., ii, 1088, 1089.

**Lead salts**, active, obtained from pitch-blende, properties of (EBERT), A., ii, 244.

fused, nature of the metallic fog in (LORENZ, v. HEVESY, and WOLFF), A., ii, 491.

behaviour of, in the stomach (THOMASON), A., ii, 60.

**Lead arsenate**, use of, in viticulture (MOREAU and VINET), A., ii, 326, 529.

carbonate, equilibria in the precipitation of (HERZ), A., ii, 972.

basic (SACHER), A., ii, 40.

chloride, ammonium chloride and water, the system (BRÖNSTED), A., ii, 381.

fluorides, double salts of, with other halides of lead (SANDONNINI), A., ii, 491.

**Lead** halides, equilibrium of, with each other (SANDONNINI), A., ii, 284.  
 nitrate, transference experiments with (KALK), A., ii, 90.  
 and pyridine, equilibrium in the system (WALTON and JUDD), A., ii, 705.  
 oxide, oxidation of, in presence of light and air (KASSNER), A., ii, 284.  
 oxides, action of, on potassium tartrate (KRAUSKOFF), A., i, 519.  
 and salts, estimation of (CHWALA and COLLE), A., ii, 441.  
 peroxide, estimation of, volumetrically (SACHER), A., ii, 770.  
**Triplumbic tetroxide (red lead)** (MILBAUER), A., ii, 113.  
 silicates (WALLER), A., ii, 983.  
 potassium sulphate (BRÖNSTED), A., ii, 856.

**Lead organic compounds** :—  
 Lead di- $\gamma$ -amyl dibromide (RENGER), A., i, 188.  
 di-sec-butyl bromide (RENGER), A., i, 188.  
 diethyl dibromide (TAFEL), A., i, 188.  
 di-isopropyl, salts of (TAFEL), A., i, 188.  
 tri-sec-butyl chloride (RENGER), A., i, 188.  
 triethyl bromide (TAFEL), A., i, 188.  
 tri-isopropyl chloride and iodide (TAFEL), A., i, 188.

**Lead**, detection of, barium, strontium and calcium (BROWNING and BLUMENTHAL), A., ii, 1032.  
 estimation of, electrolytically (BENNER), A., ii, 155.  
 estimation of, in alloys with antimony and tin (BLAKELEY and CHANCE), A., ii, 659.

**Lead minerals**, from Kansas, Missouri (ROGERS), A., ii, 900.

**Lecithin**, action of, on diastase (LAPIDUS), A., i, 248.  
 and diastatic action (TERROINE), A., ii, 997.  
 action of, in the Wassermann reaction (BROWNING, CRUCKSHANK, and GILMOUR), A., ii, 312.  
 emulsions, physico-chemical properties of (HANDOVSKY and WAGNER), A., i, 408.  
 influence of, on absorption by the skin (BORSCHIM), A., ii, 1007.  
 extraction and estimation of (COHN), A., ii, 779.  
 estimation of (VIRCHOW), A., ii, 945.  
 estimation of, in oil (FRESENIUS and GRÜNHUT), A., ii, 343.

**Lecithins**, detection of (CASANOVA), A., ii, 673.

**C. ii.**

**Leguminosæ**, nutrition of nitrogen by (RITTER), A., ii, 428.

**Leucic acid**. See *iso*Hexoic acid,  $\alpha$ -hydroxy-.

**Leucite**, optical characters of (RINNE and KOLB), A., ii, 209.

**Leuco-bases** derived from diphenylethylene (LEMOULT), A., i, 399.

**Leucocytes**, enzymes of (TSCHERNORUZKI), A., ii, 1108.

**Leucomaine**, new, from beef (CORREAL), A., i, 396.

**Leucomalachite green**, detection of blood by means of (MICHEL), A., ii, 675.

**Leucomethylene-blue-sulphonic acid**, amino-, zinc salt and nitro- (WEIL, DÜRRSCHNABEL, and LANDAUER), A., i, 1006.

**Leucyl- $\alpha$ -amino-*n*-nonoylglycine** (HORWOOD and WEIZMANN), T., 1579; P., 214.

“*Lichen quercinus viridis*,” composition of (SENFT), A., ii, 527.

**Lichens** and their constituents (HESSE), A., i, 208.

**Light**. See under Photochemistry.

**Lime**. See Calcium oxide.

**Lime saltpetre**, analogies of (DINSLAGE), A., ii, 1027.

**Limonene**, hydrogenation of (VAVON), A., i, 657.

*d*- and *b*-Limonene nitrosoazides and their phenylcarbamyl derivatives (FORSTER and VAN GELDEREN), T., 2064; P., 195.

**Linalyl bromide** and its derivatives (ROURE-BERTRAND FILS, DUPONT, and LABAUNE), A., i, 895.

**Linaria vulgaris**, phytosterol and its derivatives from (KLOBB and GARNIER), A., i, 972.

**Linoleic acid**, ammonia salts (FALCHIOLA), A., i, 175.

**Linolenic acid** (ROLLETT), A., i, 175.  
 trichloride tri-iodide (HEIDUSCHKA and RHEINBERGER), A., i, 766.

$\alpha$ -Linolenic acid and its salts and derivatives (ERDMANN), A., i, 832.

**Linseed**, hydrolysis of the protein of (ROBERTSON), A., i, 341.

**Linseed oil** (ROLLETT), A., i, 175.

**Lipase**, production of, by bacteria (SÖHNGEN), A., ii, 639.  
 heat resistant (SÖHNGEN), A., i, 825.  
 pancreatic, action of (HAMSÍK), A., i, 411; (VISCO), A., ii, 809.  
 solubility of (BERCZELLER), A., i, 758.  
 action of serum on (SHAW-MACKENZIE), A., ii, 418.

**Ricinus (JALANDER)**, A., i, 1053.

**Lipoids** from animal organs (GÉRARD and VERHAEGHE), A., ii, 508.  
 of blood, action of, on blood formation (KEPINOW), A., ii, 125.  
 of egg-yolk (SERONO and PALOZZI), A., ii, 1005.  
 in the liver (WILSON), A., ii, 1111.  
 action of, on liver diastase (CENTANNI), A., ii, 54; (STARKENSTEIN), A., ii, 747.  
 importance of, in nutrition (STEPP), A., ii, 1002.  
 from tissues, qualitative analysis of (SMITH and MAIR), A., ii, 1006.  
 estimation of halogens in (CAPPENBERG), A., ii, 927.

**Liquid**, apparatus for maintaining the level of a (NOGA), A., ii, 875.  
 rate of dissolution of a gas in a (CARLSON), A., ii, 589.  
 normal, expansion pressure of a (GAY), A., ii, 1058.

**Liquids**, properties of, and molecular attraction (KLEEMAN), A., ii, 966.  
 dielectric constants of, at high pressures (ORTVAY), A., ii, 961.  
 determination of the density of (HARTLEY and BARRETT), T., 1072; P., 100.  
 capillary rise of (BEGLOW and HUNTER), A., ii, 471.  
 molecular association in (BATCHINSKI), A., ii, 189.  
 molecular complexity of (GUYE), A., ii, 1067.  
 binary solutions of (MARILLIER), A., ii, 583.  
 determination of the specific heat of (MELLECOEUR), A., ii, 851.  
 calculation of the latent heat of vaporisation of (THORKELSSON; LEWIS), A., ii, 855.  
 relation of vapour pressure to specific gravity in binary mixtures of (DOROSCHEWSKY), A., ii, 698.  
 surface tension at contact of two (VAN DER NOOT), A., ii, 859.  
 internal pressure of (AMAGAT), A., ii, 1061.  
 compression of, at high pressures (PARSONS and COOK), A., ii, 699.  
 causes of the constant temperature variation in the vapour pressure of (MICHAUD), A., ii, 371.  
 separation of constant-boiling mixtures of (GOLODTZ), A., ii, 1064.  
 thermal conductivity of (GOLD-SCHMIDT), A., ii, 579.  
 critical solution temperatures of (MOLES), A., ii, 793.  
 absorption of, by porous substances (RUSSENBERGER), A., ii, 794.

**Liquids**, viscosity and molecular weight of (BINGHAM), A., ii, 372.  
 viscosity of, in relation to the theory of Van der Waal's theory (SMO-LUCHOWSKI), A., ii, 258.  
 used for the separation of minerals, viscosity of (CLERICI), A., ii, 257.  
 turbulence viscosity of (BOSE and BOSE), A., ii, 257; (v. KÁRMÁN), A., ii, 469.  
 anisotropic (FRIEDEL and GRAND-JEAN), A., ii, 1; (GRANDJEAN), A., ii, 165.  
 "swarm" theory of (BOSE), A., ii, 184.  
 colloidal and non-colloidal, internal friction of (DIENES), A., ii, 590.  
 crystalline (v. WARTENBERG), A., ii, 952.  
 mixed, latent heats of vaporisation of (TYRER), T., 1633; P., 215, 319.  
 relation between viscosity and fluidity of (BINGHAM and WHITE), A., ii, 858.  
 organic, freezing point of (Timmermans), A., ii, 854.  
 viscosity of (SORKAU), A., ii, 793.  
 absorption of hydrocarbons by (McDANIEL), A., i, 829.  
 poisonous, hygroscopic or low-boiling, apparatus for measuring (STEINKOPF), A., ii, 106.

**Liquorice juice**, analysis of (GADOIS and GADOIS), A., ii, 948.

root, estimation of glycyrrhizin and sugars in (ERIKSSON) A., ii, 346.

**Lithium**, absorption spectrum of (BEVAN), A., ii, 350.  
 compounds of nitrogen and hydrogen with (DAFERT and MIKLAUZ), A., ii, 393.

**Lithium alloys** with mercury (SCHUKOFFSKY), A., ii, 882.

**Lithium carbide**, action of nitrogen (TUCKER and MOODY), A., ii, 883.

**periodate** (BARKER), T., 1326; P., 198.

**nitride** (DAFERT and MIKLAUZ), A., ii, 39.

**silicates** (RIEKE and ENDELL), A., ii, 490, 982.

**metasilicate**, fusion temperature of (JAEGER), A., ii, 981.

**persulphate**, preparation of (OTIN), A., ii, 1088.

**Lithium-amide** and -imide (RUFF and GOERGES), A., ii, 281.

**Trilithiumamide** (DAFERT and MIKLAUZ), A., ii, 39.

**Trilithiumammonium** (DAFERT and MIKLAUZ), A., ii, 39.

**Lithium**, estimation of (MURMANN), A., ii, 334, 439.  
estimation of, in water (GAUTIER and MOUREU), A., ii, 300.

**Lithocholic acid** (FISCHER), A., i, 803.

**Litmus**, preparation of a sensitive and stable solution of (PÜSCHEL), A., ii, 147.

**Liver**, functions of the (WEHRLE), A., ii, 812.  
work done by the (VERZÁR), A., ii, 746.  
magnitude of the work of (PORGE), A., ii, 1008.  
parallelism between the glycogenic and antitoxic functions of the (IGLESIAS), A., ii, 757.  
autolysis of the tissue of the, effect of thyroid administration on (COOKE and BEERE), A., ii, 415.  
the tryptic and autolytic actions of the (SIMON), A., ii, 54.  
formation of amino-acids in the (EMB-DEN and SCHMITZ), A., ii, 53.  
degradation of carbohydrates in the (WIRTH), A., ii, 629.  
influence of fats on the activity of ferments in the (CHOAY), A., ii, 747.  
formation of glycogen in the (SCHÖNDORFF and SÜCKROW : SCHÖNDORFF and GREBE), A., ii, 306 ; (MURSCHAUSER and HAFMANS), A., ii, 414.  
distribution of glycogen in the (MACLEOD and PEARCE), A., ii, 219.  
relation of the kidney to the glycogen of the (GRÜNWALD), A., ii, 130.  
lipoids in the (WILSON), A., ii, 1111.  
influence of lipoids on diastase of the (STARKENSTEIN), A., ii, 747.  
maltase in the (DOXIADÉS), A., ii, 619.  
effect of narcotics on oxidation in the (JOANNOVICS and PICK), A., ii, 628.  
nucleic acid in the (MASING), A., ii, 1111.  
formation of sugar in the (LOEWIT), A., ii, 130.  
influence of the, on the combustion of sugar (VERZÁR), A., ii, 746.  
chemical changes in the, in pathological processes (SLOWTZOFF and SOBOLEFF), A., ii, 310.  
influence of potassium iodide on the accumulation of mercury in the (BLUMENTHAL and OPPENHEIM), A., ii, 1014.  
chemical changes in the, after phosphorus poisoning (SLOWTZOFF), A., ii, 315 ; (WOHLGEMUTH), A., ii, 517.  
disease of the purine metabolism in (LA FRANCA), A., ii, 1013.

**Liver** of oxen, analysis of (DANIEL-BRUNET and ROLLAND), A., ii, 1111.  
*Laphira alata*, composition of fat from the seeds of (PICKLES and HAYWORTH), A., ii, 1024.

**Lublinite** (MOROZEWICZ), A., ii, 121.

**Luciferescine** (McDERMOTT), A., i, 396.

**Luminescence**, chemical, lecture experiment for showing (HECZKO), A., ii, 269.  
of hydrocarbons and their derivatives (STOBBE and EBERT), A., ii, 562.

**d-Lupanine** and its salts (BECKEL), A., i, 743.

**Lupeose** (SCHULZE and PFENNINGER), A., i, 17.

**Lupins**, sensitiveness of, towards lime (PFEIFFER and BLANCK), A., ii, 761.

**2:6-Lutidine** salts (DEHN and DEWEY), A., i, 915.

**Lutidone**, velocities of reaction of, with phenylhydrazine and with hydroxylamine (SCHÜTTLE), A., ii, 1079.

**Lymph**, surface tension of (BUGLIA), A., ii, 1113.  
passage of immune substances into (LUCKHARDT and BECHT), A., ii, 217.  
chemical reaction of (QUAGLIARIELLO), A., ii, 1114.  
action of, on diastases (WOHLGEMUTH), A., ii, 743.  
spaces, migration of solutions through the (MELTZER), A., ii, 220.  
physiology of (CARLSON, WOELFEL, and POWELL), A., ii, 620.

**M.**

**Magnesite**, Alpine deposits of (GROSS-PIETSCH), A., ii, 807.

**Magnesium**, presence of, in aluminium alloys (WILM), A., ii, 493.  
metabolism. See Metabolism.

**Magnesium alloys** with aluminium (BRONIEWSKI), A., ii, 115.  
with cadmium, electrical conductivity and hardness of (URAZOFF), A., ii, 887.  
with calcium (BAAR), A., ii, 611.  
with silver, electrical conductivity and hardness of (SMIRNOFF and KURNAKOFF), A., ii, 888.

**Magnesium salts**, soluble, action of potassium hydrogen carbonate on (NANTY), A., ii, 282.

**Magnesium carbonate**, equilibrium between, and potassium hydrogen carbonate (NANTY), A., ii, 103.  
isomorphous mixtures of, with calcium and iron carbonates (DIESEL), A., ii, 725.

**Magnesium**, caesium and rubidium chromates (BARKER), T., 1327; P., 198.

**Magnesium organic compounds**, formation of (STADNIKOFF), A., i, 435; (ODDO), A., i, 443.

transpositions with (ODDO), A., i, 488.

action of, on the cinchoua alkaloids and on styrene (ODDO), A., i, 433.

action of, on anhydrides of dicarboxylic acids (BAUER; BAUER and WÖLZ), A., i, 871.

reaction of, with cinnamylidene esters (REYNOLDS), A., i, 860.

action of, on ethyl orthoformate (SHDANOVITSCH), A., i, 10.

action of, on methyl acetylpyrotartrate (BARBIER and LOCQUIN), A., i, 708.

action of, on thionyl chloride and sulphur dioxide (ODDO), A., i, 286.

**Magnesium methyl iodide**, estimation of traces of water by means of (ZEREWITINOFF), A., ii, 1026.

indenyl bromide (GRIGNARD and COURTOT), A., i, 193.

phæophorbide (WILLSTÄTTER and STOLL), A., i, 143.

**Magnesium**, separation of, from calcium (MURMANN), A., ii, 440.

estimation of, as oxide (KALLAUNER), A., ii, 1032.

estimation of, in hard water (NOTH-NAGEL), A., ii, 1031.

**Magnetic double refraction**. See under Photochemistry.

field, use of, for the determination of constitution in organic chemistry (PASCAL), A., ii, 91, 183, 251, 252, 464, 679, 850, 1058.

moments of molecules, relation of, to the magneton (WEISS), A., ii, 694.

properties of alloys of copper, manganese and tin (ROSS and GRAY), A., ii, 183.

rotation. See under Photochemistry.

substances, solid, magneton in (WEISS), A., ii, 367.

**Magnetisation** of cobalt and nickel salts (WEISS and FOËX), A., ii, 183.

of ferro-magnetic substances at high temperatures (WEISS and FOËX), A., ii, 250.

**Magnetism** at low temperatures (WEISS and ONNES), A., ii, 15; (ONNES and PERRIER), A., ii, 694.

of complex salts (FEYTIS), A., ii, 367.

**Magnetite**, micro-structure of (MÜGGE), A., ii, 1101.

**Magneton** (WEISS), A., ii, 183.

in solid paramagnetic substances (WEISS), A., ii, 367.

**Magneton**, relation of, to the magnetic moments of molecules (WEISS), A., ii, 694.

magnetic saturation of (WEISS), A., ii, 250.

**Maize**, effects of nutrition with (BAGLIONI), A., ii, 999.

experimental chlorosis of (MAZÉ), A., ii, 1126.

**Maleic acid**, synthesis of, from acetylene di-iodide (KEISER and McMMASTER), A., i, 949.

photochemical inversion of (BRUNER and KRÓLIKOWSKI), A., i, 9.

isomerism of, and fumaric acid (GLAS-MANN), A., i, 261.

**Maleic acid**, bromo-, benzylamine salt of (FRANKLAND), T., 1779; P., 206.

**Maleic dialdehyde**,  $\alpha$ -bromo- $\beta$ -hydroxy-, dibromo-, and their derivatives (CHAVANNE), A., i, 737.

**Maleinalnil**, iminohydroxy- (DIECKMANN), A., i, 457.

**Malic acid**, preparation of, from "sugar sand" (WARREN), A., ii, 821.

oxidation of, by animal tissues (BATTELLI and STERN), A., ii, 412.

consumption of, during fermentation (MESTREZAT), A., ii, 421.

estimation of, polarimetrically (YODER), A., i, 1141.

**Malic acid**, influence of electrolytes on the optical activity of, in aqueous solution (STUBBS), T., 2265; P., 225.

**Malonamide**, condensation of, with ethyl and methyl diethylmalonate (REMFRY), T., 620.

**Malonic acid**, influence of alkyl substituents on the conductivity of (MELDRUM), A., ii, 692.

condensation of  $\alpha\beta$ -dibromopropaldehyde with (LESPIEAU), A., i, 106.

action of, on starch and dextrin (OECHSNER DE CONINCK and RAYNAUD), A., i, 770.

diethyl ester, sodium derivative, condensation of, with ethyl citraconate (HOPE), P., 281.

**Malonic acid**, bromo-, methyl ester (KOHLER, HERITAGE, and MACLEOD), A., i, 864.

nitro-, ethyl ester, salts of (CURTISS and KOSTALEK), A., i, 518.

**Malonylbenzidine** (REMFRY), T., 621.

**Malonylmalonamide** and its sodium salt (REMFRY), T., 615; P., 73.

**Malt**, composition of embryos of (YOSHIMURA), A., ii, 325.

diastases of, influence on the properties of (FERNBACH and SCHEN), A., i, 98.

**Maltase** in blood-serum and liver (DOXIADES), A., ii, 619.

**Maltose**, densities of solutions of (LING, EYNON, and LANE), A., i, 354.  
mutarotation of (SCHLIEPHACKE), A., i, 16.

**Maltose-*o*-carboxyanilide** (IRVINE and HYND), T., 165; P., 9.

**Mammalian tissues**, indophenol oxydase of (VERNON), A., ii, 905.

**Mammary glands**. See **Glands**.

**Mandelic acid**, *p*-hydroxy- (*p*-hydroxy-phenylglycollic acid), preparation of (ALOY and RABAUT), A., i, 780.

**Manganese**, refraction and absorption of (FRÉEDERICKSZ), A., ii, 349.  
influence of, on the properties of steel (LANG), A., ii, 206.  
biochemistry of (PICCININI), A., ii, 622.  
influence of, on plant development (STOKLASA), A., ii, 643.  
influence of, on the development of *Aspergillus niger* (BERTRAND and JAVILLIER), A., ii, 222.  
and zinc, joint influence of, on the development of *Aspergillus niger* (BERTRAND and JAVILLIER), A., ii, 421.  
metabolism. See under **Metabolism**.  
manurial experiments with (LEIDREITER), A., ii, 923.  
function of, in manure (BERNARDINI), A., ii, 327.  
in soils (CONTINO), A., ii, 649.  
in wines (PRANDI and CIVETTA), A., ii, 648.

**Manganese alloys** with copper and tin, magnetic properties of (ROSS and GRAY), A., ii, 183.  
with thallium (BAAR), A., ii, 611.

**Manganese antimonide**, bismuthide and phosphide (HILPERT and DIECKMANN), A., ii, 1090.

arsenides (ARRIVAUT), A., ii, 399.

arsenide, bismuthide, silicide, selenide, sulphide and telluride (WEDEKIND, VEIT, and FETZER), A., ii, 985.  
preparation of (HILPERT and DIECKMANN), A., ii, 985.

boride (HOFFMANN), A., ii, 116.

dioxide, action of selenious acid with (MARINO and SQUINTANI), A., ii, 608.  
use of colloidal solutions of, in biochemical oxidation (SJOLLEMA), A., i, 411.

colloidal, action of, with hydrogen peroxide (BREDIG and MARCK), A., ii, 399.

sulphate, manurial value of (CARLIER), A., ii, 147; (MASONI), A., ii, 821.

**Manganates**, thermal formation of (SACKUR), A., ii, 400.

**Permanganates**, absorption spectra of (MERTON), T., 637; P., 66.

**Manganous oxide**, mixtures of, with silica (DOERINCKEL), A., ii, 608.

**Manganese**, precipitation of, as carbonate (SCHIRM), A., ii, 1138.  
detection and estimation of small quantities of (BERTRAND), A., ii, 542.  
estimation of (RAIKOW and TISCHKOFF), A., ii, 936.  
estimation of, modifications of Volhard's method for (CAHEN and LITTLE), A., ii, 229.  
estimation of, electrolytically, deposition of chromium in the (KÖSTER), A., ii, 230.  
estimation of, in honey (GOTTFRIED), A., ii, 824.  
estimation of, in steel (KAYSER), A., ii, 70.  
quantitative separation of iron and (SANCHEZ), A., ii, 1138.

**Manganitartaric acid**, sodium salt (JOB and GOISSEDET), A., i, 176.

**Mannitotriose**, fermentation of, and its carbamide (BIERRY), A., i, 263.

**Mannitoboric acid** and its salts (FOX and GAUGE), T., 1075; P., 136.

**Mannose-*o*-carboxyanilide** (IRVINE and HYND), T., 164; P., 9.

**Manometer**, glass, some forms of (JACKSON), T., 1066; P., 45.

**Manure**, function of manganese in (BERNARDINI), A., ii, 327.

**Manures**, nitrogenous, from the atmosphere, field trials with (HENDRICK; BAESSLER), A., ii, 650.  
for sugar beet (ERBEN, PRACHELD, and VILIKOVSKY), A., ii, 65.  
organic, availability of (LIPMAN, BROWN, and OWEN), A., ii, 924.

**Manurial experiments** (WAGNER; SCHULZE), A., ii, 65.  
in pots and in the field (COHEN), A., ii, 763.  
with manganese (LEIDREITER), A., ii, 923.  
with wheat and barley (POLLE), A., ii, 224.

**Marcasite**, constitution of (PLUMMER), A., ii, 901.  
crystallography of (PÖSCHL), A., ii, 208.

**Marjoram oil**, Spanish (DORRONSORO), A., i, 74.

**Maroniol** (SCHIMMEL & Co.), A., i, 894.

**Matches**, characteristics and composition of early (CLAYTON), P., 229.

*Matricaria chamomilla*, phytosterols and their derivatives from (KLOBB), A., i, 972.

**Matter**, a new constituent of (WEISS), A., ii, 183.

chemical composition of (MULDER), A., ii, 33.

state of aggregation of (SCHRYVER), A., i, 245.

observations unexplained by the atomic and molecular structure of (MAGNANINI), A., ii, 710.

radioactivity as a property of (WULF), A., ii, 709.

**Meat**, estimation of phosphorus in (GRINDLEY and ROSS), A., ii, 332.

**Meat extract**, physiological value of (VÖLTZ and BAUDREXEL), A., ii, 214.

**Meat juice**, alkali phosphate in (SALKOWSKI), A., ii, 39.

**Meconic acid**, crystallography of (GAUBERT), A., ii, 101.

**Meconine**, bromo-, chloro-, and iodo- (PERKIN and ROBINSON), T., 783.

**Meconium**, occurrence of haematoxylin in the (BORRIEN), A., ii, 133.

**Melamazine** and its salts, from dicyanodiamide (HOFMANN and EHRHART), A., i, 843.

**Melanin** (GORTNER), A., ii, 908.

**Melanin pigments** (PIETTRE), A., i, 1006.

**Melanite** from Sutherlandshire (GEMMELL), A., ii, 300.

**Melanterite** from Siena (MANASSE), A., ii, 499.

**Meliatin** (BRIDEL), A., i, 659.

**Melissone** and its oxime (EASTERFIELD and TAYLOR), T., 2303; P., 279.

**Melting-point apparatus** (SEIDELL), A., ii, 254.

lines, retrogressive (SMITS; SMITZ and TREUB), A., ii, 855.

**Membranes**, cause of the permeability of (MOORE, ROAF, and WEBSTER), A., ii, 1072.

semi-permeable, preparation of (FOUARD), A., ii, 267.

**Memorial lecture**, Berthelot (DIXON), T., 2353; P., 270.

$\Delta^{2,4}$ -**Menthadiene** (HENDERSON and BOYD), T., 2161; P., 277.

*cis*- and *trans*- $\Delta^{3,8(9)}$ -**Menthadiene** (PERKIN), T., 751; P., 95.

$\Delta^{4,8(9)}$ -**Menthadiene** (PERKIN), T., 757; P., 95.

$\Delta^{5,8(9)}$ -**Menthadiene** (PERKIN), T., 737; P., 95.

$\Delta^{5,8(9)}$ -**Menthadiene** (PERKIN), T., 740; P., 95.

*d*- and *dl*- $\Delta^{2,8(9)}$ -**Menthadiene**, synthesis of, and dihydrochloride of the former (HAWORTH, PERKIN, and WALLACH), T., 126, 130; P., 4.

*d*- and *l*- $\Delta^{3,8(9)}$ -**Menthadiene** (LUFF and PERKIN), T., 525; P., 57.

*d*- $\Delta^{3,8(9)}$ -**p-Menthadiene** (CHOU and PERKIN), T., 537; P., 57.

**Menthadiol** from *i*-pinol hydrate (WALLACH), A., i, 470.

*l*- and *m*-**Menthanol**, phenylurethanes of (WALLACH), A., i, 470.

*p*-**Menth-8-ol**, phenylurethane of (WALLACH), A., i, 470.

**Menth-2-one**, 1-bromo-, 1- and 5-chloro-, and 1-hydroxy- (KÖTZ and STEINHORST), A., i, 211.

**Menth-3-one**, 4-bromo-, and 4- and 5-chloro- (KÖTZ and STEINHORST), A., i, 211.

**Mentha piperita**, peppermint oil from leaves of (MURAOUR), A., i, 138.

$\Delta^{8(9)}$ -**Menthene** (KIJNER and ZAVADOVSKY), A., i, 1029.

$\Delta^3$ -**Menthene dibronide** (HENDERSON and BOYD), T., 2161; P., 277.

*cis*- and *trans*- $\Delta^3$ -*o*-**Menthanol(8)** (PERKIN), T., 751; P., 95.

$\Delta^4$ -*o*-**Menthanol(8)** and its phenylurethane (PERKIN), T., 756; P., 95.

$\Delta^5$ -*o*-**Menthanol(8)** and its phenylurethane (PERKIN), T., 736; P., 95.

$\Delta^6$ -*o*-**Menthanol(8)** (PERKIN), T., 740; P., 95.

*d*- and *dl*- $\Delta^2$ -*m*-**Menthanol(8)**, synthesis of, and their phenylurethanes (HAWORTH, PERKIN, and WALLACH), T., 125, 129; P., 4.

*d*-, and *l*- $\Delta^3$ -*m*-**Menthanol(8)** (LUFF and PERKIN), T., 525; P., 57.

*d*- $\Delta^3$ -*p*-**Menthanol(8)** (CHOU and PERKIN), T., 537; P., 57.

*o*-**Menth-5-one**, hydrochloride of the oxime, and semicarbazone of (KÖTZ and ANGER), A., i, 309.

**Menthol**, carbonic acid esters of (EINHORN and ROTHLAUF), A., i, 705.

ethoxyacetyl derivative of (EINHORN), A., i, 137.

**Menthols** (PICKARD and LITTLEBURY), P., 324.

$\beta$ -**Menthol-lactoside** and its heptaacetyl derivative (FISCHER), A., i, 217.

**Menthone**, inversion of (TUBANDT, MOHS, TUBANDT, and WEINHAUSEN), A., ii, 28.

action of magnesium ethyl iodide on (VANIN), A., i, 474.

action of zinc and allyl iodide on (SAYTZEFF), A., i, 474.

**Menthonitrile** nitrosochloride and nitro-piperide (WALLACH and HENJES), A., i, 313.

**Menthoxyacetic acid**, allyl and propyl esters (FRANKLAND and O'SULLIVAN), T., 2332; P., 319.

**Menthoxycetic allylamide** (FRANKLAND and O'SULLIVAN), T., 2331; P., 319.

**propylamide** (FRANKLAND and O'SULLIVAN), T., 2332; P., 319.

**L-Menthylcarbamic acid**, *dl*- and *d*-*b*-butyl esters (PICKARD and KENYON), T., 64.

**Methylglycuronic acid**, preparation of (BANG), A., ii, 664.

**Menyanthes trifoliata**, new glucoside from (BRIDEL), A., i, 659.

**Mercury**, spectrum of (PASCHEN), A., ii, 833.

line spectrum of (GLAGOLEFF), A., ii, 450.

vacuum tube spectra of (HORTON), A., ii, 559.

long-waved radiation from the vapour of (RUBENS and v. BAEYER), A., ii, 350.

pure, electrical resistance of, at helium temperatures (ONNES), A., ii, 575, 687.

colloidal (AMBERGER), A., ii, 205.

reducing actions of (BORAR), T., 1414; P., 128.

mercuric oxide electrode. See Electrode under Electrochemistry.

action of *Allium sativum* juice on (BANERJEE), P., 234.

antiseptic solutions of, action of caoutchouc on (GLENNY and WALPOLE), A., ii, 141.

influence of ferric salts and of manganese nitrate on the rate of solution of, in nitric acid (RAY), T., 1012; P., 4.

vapour, influence of gases on the fluorescence of (FRANCK and WOOD), A., ii, 169.

action of, on sodium (KAHLENBERG and KLEIN), A., ii, 723.

sodium chloride, and nickel or platinum, reactions in the system (PETERS), A., ii, 1095.

pharmacological action of insoluble preparations of (FILIPPI), A., ii, 1014.

complex compounds of, with cinnamic acid and its esters (SCHRAUTH, SCHOELLER, and STRUENSEE), A., i, 595.

therapeutics of syphilis and spirolophilus (LAUNOY and LEVADITI), A., ii, 912.

influence of potassium iodide on the accumulation of, in the liver (BLUMENTHAL and OPPENHEIM), A., ii, 1014.

**Mercury alloys (amalgams)** with arsenic (DUMESNIL), A., ii, 403.

with cadmium, conductivity of (CALVO), A., ii, 575.

with lithium (SCHUKOFFSKY), A., ii, 882.

with organic substances (McCoy and MOORE), A., i, 270.

with silver, relation of the conductivity of, to temperature (CALVO), A., ii, 574.

with silver and tin (JOYNER), T., 195; P., 5.

**Mercury oxychlorides** (DRIOT), A., ii, 397.

**Mercuric bromide, chloride and iodide**, vapour pressures of (JOHNSON), A., ii, 727.

chloride, kinetics of the reduction of, by phosphorous acid (GARNER, FOGLESONG, and WILSON), A., ii, 972.

action of, on glycine (SIEGFRIED), A., i, 427.

caesium chloride (FOOTE and HAIGH), A., ii, 397.

silver iodide, uniformity of (WEGELIUS), A., ii, 884.

oxide, action of, on hydrazine hydrate (HALE and NUNEZ), A., i, 845.

**Mercurous chloride**, vapour pressure of (SMITH and MENZIES), A., ii, 492.

**Mercury** :—

**Mercurous chloride** vapour, constitution of (SMITH and MENZIES), A., ii, 114.

reactions of (HERZ), A., ii, 285.

perchlorate, voltameter with (MATHERS and GERMANN), A., ii, 577.

nitrate, action of ammonia (SAHA and CHOUDHURI), A., ii, 804.

sulphate as a depolariser in normal cells (VAN GINNEKEN), A., ii, 179; (HULETT), A., ii, 848.

**Dimercurammonium** compounds (GAUDECHON), A., ii, 398.

**Mercury organic compounds**, aromatic, biochemistry of (SCHRAUTH and SCHOELLER), A., ii, 637; (BLUMENTHAL), A., ii, 1017.

disinfecting power of (SCHRAUTH and SCHOELLER), A., ii, 63.

pharmacology of (MÜLLER, SCHOELLER, and SCHRAUTH), A., ii, 755.

aromatic, physiological action of (BLUMENTHAL), A., ii, 517.

**Mercurianilinoacetic acid**, *o*-bromo-, *o*-chloro-, and *o*-iodo-, ethyl esters, and *o*-hydroxy-, metallic salts and anhydride of (SCHOELLER, SCHRAUTH, and GOLDAKER), A., i, 699.

**Mercurianilinobutyric acid**,  $\alpha$ -dibromo-,  $\alpha$ -dichloro-, and  $\alpha$ -di-iodo-, ethyl esters and  $\alpha$ -di-hydroxy-, anhydride (SCHOELLER, SCHRAUTH, and GOLDACKER), A., i, 700.

**Mercurianilinopropionic acid**,  $\alpha$ -dibromo-,  $\alpha$ -chloro-, and dichloro-, ethyl esters and  $\alpha$ -di-hydroxy-, anhydride of (SCHOELLER, SCHRAUTH, and GOLDACKER), A., i, 700.

**Mercurianilinovaleric acid**,  $\alpha$ -dibromo-,  $\alpha$ -dichloro-, and  $\alpha$ -di-iodo-, ethyl esters and  $\alpha$ -di-hydroxy-, anhydride (SCHOELLER, SCHRAUTH, and GOLDACKER), A., i, 700.

**Mercuricarboxylic acids**, hydroxy-, preparation of soluble compounds from (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 594.

**Mercury**, detection of (MOORE), A., ii, 771.  
detection of, in explosives (PATTERSON), A., ii, 442.  
spectroscopic detection of, in explosives (FLORIN), A., ii, 1033.  
detection of, in urine (SALKOWSKI), A., ii, 771, 934.  
estimation of, volumetrically (REINTHALER), A., ii, 660; (SMITH), A., ii, 824.  
estimation of, in soluble mercuric salts (PROCTER and SEYMOUR-JONES), A., ii, 541.  
estimation of, colorimetrically in urine (HEINZELMANN), A., ii, 772.

**Mesolite** from Palagonia, Sicily (PONTE), A., ii, 298.

**Mesothorium** (MARCKWALD), A., ii, 8.  
chemistry of (SODDY), T., 72.  
chemical and radio-active properties of (HAHN), A., ii, 845.  
action of, on animal germ cells (HERTWIG), A., ii, 1188.

**Mesoxalic acid**, preparation of esters of (MEYER), A., i, 420.  
brucine salt (HILDITCH), T., 235.

**Metabolism** in a case of glycosuria (MEDIGRECEANU and KRISTELLER), A., ii, 417.  
function of hormones in regulating (ARMSTRONG and ARMSTRONG), A., ii, 642.  
with resected small intestine (UNDERHILL), A., ii, 214.  
of matter and energy, influence of blood transfusion on the (HÁRI), A., ii, 739.  
effect of parathyroidectomy on (GREENWALD), A., ii, 507.  
relation of sex to (KRAUSE and CRAMER), A., ii, 752.

**Metabolism**, action of sulphur compounds on (JONES), A., ii, 742.  
relative value of food- and body-protein in (v. HOESSLIN and LESSER), A., ii, 904.  
relation of sulphur and phosphorus in (GROSS), A., ii, 810.  
increase in, due to the work of typewriting (CARPENTER), A., ii, 621.  
animal, use of "romauxankalk" in (HAGEMANN), A., ii, 507.  
calcium (VOORHOEVE), A., ii, 126, 622.  
during lactation, effect of mineral waters on (COLESCHI), A., ii, 507.  
dependence of, on the organic food constituents (KOCHMANN), A., ii, 410.  
of calcium phosphate (BERG), A., ii, 134.  
of calcium, magnesium and phosphorus, influence of food on the (KOCHMANN and PETZSCH), A., ii, 506.  
carbohydrate (REACH), A., ii, 743; (UNDERHILL), A., ii, 910.  
and diabetes (PAVY and GODDEN; UNDERHILL and FINE), A., ii, 1001.  
behaviour of acetone substances in (GEELMUYDEN), A., ii, 904.  
effect of ether on (GRUBE), A., ii, 303.  
effect of mucic acid on (MENDEL and ROSE), A., ii, 410; (ROSE), A., ii, 904.  
by bacilli of the *Proteus* group (GLENN), A., ii, 639.  
creatine and creatinine (MENDEL and ROSE), A., ii, 1002, 1007; (ROSE), A., ii, 1012.  
creatine and creatinine, in dogs with Eck fistula (FOSTER and FISHER), A., ii, 744.  
of creatinine (VOEGTLIN and TOWLES), A., ii, 411.  
fat, in absence of pancreatic juice (JANSEN), A., ii, 623.  
gaseous, in anaphylaxis (LOENING), A., ii, 993.  
influence of intake of food on (GIGON), A., ii, 741.  
human, influence of high altitudes on (v. WENDT), A., ii, 506.  
iron, effect of diet on (KOCHMANN), A., ii, 1004.  
manganese (PICCININI), A., ii, 622.  
nitrogen, by bacteria (BOEHNCKE), A., ii, 638.  
nitrogen, influence of ammonium salts on (PESCHECK), A., ii, 1002.

**Metabolism**, effects of loss of blood and prolonged inanition on (FUCHS), A., ii, 58.  
 effect of injections of sodium chloride on (TROSLANZ), A., ii, 134.  
 of the coyote (HUNTER and GIVENS), A., ii, 303.  
 nuclein, in the dog (LEVENE and MEDIGRECEANU), A., ii, 303.  
 of oxalic acid (POHL), A., ii, 51.  
 phosphorus (GREGERSEN), A., ii, 304.  
 protein (LOEB), A., ii, 51; (FRANK and SCHITTENHELM), A., ii, 127; (DE WAELE and VANDEVELDE), A., ii, 128; (FRANK and SCHITTENHELM), A., ii, 904.  
 influence of alcohol on (SALANT and RIEGER), A., ii, 411.  
 influence of various foods on (WOLF and ÖSTERBERG), A., ii, 1003.  
 effect of pregnancy on (MURLIN), A., ii, 1004.  
 of the dog, effect of chloroform on the (LINDSAY), A., ii, 303.  
 of the foetus (LINDSAY), A., ii, 1115.  
 effect of muscular work on (PUGLIESE), A., ii, 624.  
 in phloridzin diabetes (WOLF and ÖSTERBERG), A., ii, 512.  
 purine (SCAFFIDI), A., ii, 216, 507, 625.  
 importance of allantoin in (HUNTER and GIVENS), A., ii, 218.  
 influence of phenylcinchonic acid (atophan) on (STARKENSTEIN), A., ii, 753.  
 in liver disease (LA FRANCA), A., ii, 1013.  
 action of atophan on (FROMHERZ), A., ii, 1016.  
 of starch (VERZÁR), A., ii, 744.  
 of sulphur, effect of colloidal sulphur on (MAILLARD), A., ii, 622.  
 uric acid, in rabbits (ACKROYD), A., ii, 747.  
 estimation of sulphur in (TAYLOR), A., ii, 410.

**Metaborates.** See under Boron.

**Metal**, potential differences between a, and electrolytes (GUYOT), A., ii, 1053.

**Metallic** chlorides, thermal analysis of binary mixtures of (MENGE), A., ii, 982; (SANDONNINI and SCARPA), A., ii, 984.  
 solidification of aqueous solutions of (SPERANSKY and PAVLINOVA), A., ii, 1087.  
 fluorides, crystallography of (DE SCHULTEN), A., ii, 605.

**Metallic halides**, thermal analysis of mixtures of (HERRMANN), A., ii, 801.  
 additive organic compounds of (MENSCHUTKIN), A., i, 992.  
 ions, relation between the absorption spectra of, and their valency (CRYMBLE), P., 68, 328.  
 nitrides, preparation of (VOURNASOS), A., ii, 600.  
 oxides, action of hydrogen fluoride on (VAN HAAGEN and SMITH), A., ii, 894.  
 action of, with phosphoryl chloride (BASSETT and TAYLOR), T., 1402; P., 155.  
 action of thionyl chloride on (DARZENS and BOURION), A., ii, 878.  
 catalytic scission of esters by (SABATIER and MAILHE), A., i, 348.  
 peroxides, constitution of (TUBANDT and RIEDEL), A., ii, 987.  
 salts, action of ultra-violet light on (BERTHELOT and GAUDECHON), A., ii, 242.  
 and mixtures of salts, electrical conductivity of (BENRATH and WAINOFF), A., ii, 847.  
 conductivity and dissociation of (HOSFORD and JONES), A., ii, 960; (WINSTON and JONES), A., ii, 961.  
 compounds of, with hexamethylenetetramine (BARBIERI and CALZOLARI), A., i, 184, 266, 268; (BARBIERI and LANZONI), A., i, 268.  
 hydrazinates of (FRANZEN and LUCKING), A., ii, 285.  
 compounds of, with nitrous oxide (KÖHLSCHÜTTER and SAZANOFF), A., ii, 730.  
 sulphides, action of carbonyl chloride on (CHAUVENET), A., ii, 602.  
 alkyl sulphates, hydrolysis of (DRUSHEL and LINHART), A., ii, 707.

**Metallography**, solid colloidal solutions in (BENEDICKS), A., ii, 25; (LOTTER-MOSER), A., ii, 194.

**Metals**, spectra of combustion of (MEUNIER), A., ii, 679.  
 photoelectric effect of (POHL and PRINGSHEIM), A., ii, 787; (LINDEMANN), A., ii, 788.  
 influence of radium rays on the photoelectric sensitiveness of (DEMBER), A., ii, 567.  
 velocity of emission of electrons by (HUGHES, KOVARIK, and ZAKREWSKI), A., ii, 572; (HABER and JUST), A., ii, 954.

**Metals**, heated, formation of positive ions by (KLEMENSIEWICZ), A., ii, 1050.  
 relation between the optical constants and potential of (FRÉEDERICKSZ), A., ii, 449.  
 galvanic self-induction of (VAN DEVENTER), A., ii, 693.  
 electrical conductivity of, on liquefaction (WAGNER), A., ii, 177.  
 heat liberated during the absorption of electrons by (RICHARDSON and COOKE), A., ii, 358.  
 thermoelectric forces of solid solutions of (BERNOULLI), A., ii, 363.  
 thermal expansion of (GRÜNEISEN), A., ii, 851.  
 elasticity and thermal expansion of (SIEGLERSCHMIDT), A., ii, 851.  
 conduction of, number of electrons concerned in (NICHOLSON), A., ii, 836.  
 variation of the Thomson effect with temperature in (CERMAK), A., ii, 177.  
 influence of pressure on the melting-points of (JOHNSTON and ADAMS), A., ii, 696.  
 influence of temperature on the compressibility of (GRÜNEISEN), A., ii, 188.  
 relation between the temperature-coefficient and the specific resistance of (LINDESK), A., ii, 176.  
 passivity of (DUNSTAN and HILL), T., 1853; P., 222; (KISTIAKOWSKY), A., ii, 401; (FLADE), A., ii, 461; (GRAVE), A., ii, 896.  
 formation of solid solutions of (BRUNI and MENEGHINI), A., ii, 703, 860.  
 alloys of, with silicon (FRILLEY), A., ii, 879.  
 velocity of solution of, in dissolved iodine (VAN NAME and BOSWORTH), A., ii, 973.  
 action of ammonium trinitride on (BROWNE and HOULEHAN), A., ii, 1085.  
 corrosion of (LONGMUIR), A., ii, 1089.  
 corrosion of, in sodium trinitride solution (TURRENTINE), A., ii, 693.  
 aerial oxidation of (DUNSTAN and HILL), T., 1835; P., 221.  
 action of hydrogen sulphide on the alkyl oxides of (RULE), T., 558; P., 60.  
 sulphuration of (OHMANN), A., ii, 481.  
 action of sulphuryl chloride on (NORTH), A., ii, 798.  
 decomposition of water by (KERNBAUM), A., ii, 716.

**Metals**, bivalent, organic persulphates of (BARBIERI and CALZOLARI), A., ii, 889.  
 compounds of organic salts of, with ammonia, pyridine and phenylhydrazine (GROSSMANN and JÄGER), A., i, 944.  
 colloidal, solutions of (LORENZ), A., ii, 379.  
 solubility of, in distilled water (TRAUBE-MENGARINI and SCALA), A., ii, 116.  
 action of, on guaiaconic acid (BUCKMASTER), A., i, 390.  
 pharmacological action of (GROS and O'CONNOR), A., ii, 418.  
 rare, action of salicylic acid on acids of the (MULLER), A., ii, 940.  
 univalent, thermal analysis of binary mixtures of the chlorides of (SANDONNINI), A., ii, 800.  
 thermal analysis of mixtures of cuprous chloride with chlorides of (SANDONNINI; POMA and GABBI; DE CESARIS), A., ii, 606.  
 volatile, vapour-pressure curves and heat of evaporation of (GREENWOOD), A., ii, 468.  
 recovery of hammered (GUILLET), A., ii, 97.  
 of the iron group, magnetisability of salts of (WEBER), A., ii, 1057.  
 of the platinum group, physical properties of alloys of (GEIBEL), A., ii, 10, 361.  
 precipitation of, from solutions of their salts by hydrogen (IPATIEFF and WERKHOWSKY), A., ii, 716.  
 replacement of, from non-aqueous solutions, and their solubility in oleic acid (GATES), A., ii, 394.  
 action of, on the reagents for blood (MICHEL), A., ii, 556.  
 reactivity of halogen atoms towards (STAUDINGER, CLAR, and CZAKO), A., i, 624.  
 action of, on aromatic keto-chlorides, (NORRIS, THOMAS, and BROWN), A., i, 31.  
 resistant, action of phosphoric acid on (WUNDER and JEANNERET), A., ii, 719.  
 giving sulphides insoluble in dilute acids, rapid detection of (POZZI-Escot), A., ii, 940.  
 of the platinum group, qualitative detection of (CURTMAN and ROTHBERG), A., ii, 661.  
 estimation of, electrolytically (PERDUE and HULETT), A., ii, 433.  
 apparatus for the electrolytic (SAND and SMALLEY), A., ii, 434.

**Metals**, separation of, without using hydrogen sulphide (EBLER), A., ii, 932.

use of ether in separation of (MYLIUS and HÜTTNER), A., ii, 540.

qualitative analysis of, without hydrogen or ammonium sulphides (PAMFIL), A., ii, 1030; (ROCHE), A., ii, 1031.

**Metaphosphates**. See under Phosphorus.

**Metatungstic acid**. See under Tungsten.

**Meteoric iron**, synthesis of (BENEDICKS), A., ii, 495.

from Alexandria (MEUNIER), A., ii, 1106.

from Colorado (HEADDEN), A., ii, 1106.

**Meteoric stone**, from Dokáchi (CLARKE and BOWMAN), A., ii, 616.

from Seeland (BREZINA), A., ii, 48.

**Meteoric stones** (WAHL), A., ii, 47.

**Meteoric studies** (FARRINGTON), A., ii, 407.

**Methane**, equilibrium of the formation of (PRING and FAIRLIE), P., 305.

**Methane**, dichloro-, action of, with di-*p*-tolylmethane (LAVAUX), A., i, 533.

nitro-, condensation of aromatic aldehydes with (REMFY), T., 282; P., 20.

sodium derivative, action of phenylcarbimide on (STEINKOPF and DAEGE), A., i, 280.

**Methanedisalicylic acid** and its salts and derivatives (CLEMMENSEN and HEITMAN), A., i, 542.

**Methanedi- and trisulphonic acids**, yttrium salts (PRATT and JAMES), A., ii, 893.

**Methoxide**, sodium, action of, on 7-nitrostilbene (HEIM), A., i, 717.

**4-Methoxyacetophenone**,  $\omega$ -amino-, hydrochloride (MANNICH and HAHN), A., i, 649.

2:5-dihydroxy-, and its derivatives (BARGELLINI and AURELI), A., i, 855.

**5-Methoxyacetophenone**, 2:4-dihydroxy-, and its acetyl derivative (BARGELLINI and AURELI), A., i, 856.

**4-Methoxy-3-aldehydotriphenylacetic acid**, methyl ester (BISTRZYCKI and FELLMANN), A., i, 133.

**$\epsilon$ -Methoxyamyltrimethylammonium iodide** (v. BRAUN), A., i, 612.

***p*-Methoxy- $\alpha$ - $\alpha$ -anisylcinnamic acid** (STOERMER and FRIEMEL), A., i, 633.

**1-Methoxyanthraquinone** monoxime (FREUND and ACHENBACH), A., i, 70.

4-chloro- (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 469.

**2-Methoxyanthraquinone**, 1- and 3-amino-, nitro-, and iodo- (BENESCH), A., i, 794.

**Methoxyanthraquinones**, preparation of (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 469.

**2-Methoxybenzaldehyde**, 4-amino- (BLANKSMA), A., i, 62.

**1-*p*-Methoxybenzeneazo-2-chloronaphthalene** and its acetyl derivatives (CHARRIER and FERRERI), A., i, 1046.

***o*- and *p*-Methoxybenzeneazo- $\beta$ -naphthol** (CHARRIER and FERRERI), A., i, 1046.

***o*-Methoxybenzoic acid, dithio-(*o*-methoxyphenylcarbithionic acid)**, methyl ester of (HÖHN and BLOCH), A., i, 49.

**4-Methoxybenzoic acid**, 2-acetylaminoo- (KALLE & Co.), A., i, 666.

**4-Methoxybenzophenone**,  $\alpha$ - and *p*-chloro-,  $\alpha$ - and  $\beta$ -chloroimino-,  $\alpha$ - and  $\beta$ -chloroimino-*p*-chloro- (PETERSON), A., i, 880.

**5-Methoxybenzophenone**, 2:4-di-hydroxy- (BARGELLINI and MARTEGIANI), A., i, 966.

**3-Methoxy-1:2-benzoquinone** (WILLSTÄTTER and MÜLLER), A., i, 728.

***o*-Methoxybenzoylbenzamidine** (TITTERLEY and HUGHES), T., 1506.

**2-*p*-Methoxybenzyl-1:3-dihydroisoindole** and its salts (TIFFENEAU), A., i, 810.

**$\alpha$ -*p*-Methoxybenzyl- $\alpha$ -dimethylacetophenone** (HALLER and BAUER), A., i, 726.

***p*-Methoxybenzylidimethylamine** and its salts (TIFFENEAU), A., i, 779.

**$\alpha$ -*p*-Methoxybenzylideneamino- $\alpha$ -*p*-methoxyphenylacetamide** (CLARKE and FRANCIS), T., 323.

***o*- and *p*-Methoxybenzylideneamino- $\alpha$ -phenylacetamide** (CLARKE and FRANCIS), T., 321.

***p*-Methoxybenzylidenehydantoin** (WHEELER, HOFFMAN, and JOHNSON), A., i, 923.

***p*-Methoxybenzylmethylamine** and its hydrochloride (TIFFENEAU), A., i, 779.

**Methoxyberberinium salts** (PYMAN), T., 1696; P., 215.

**Methoxycamphoroxalic acid**, methyl ester (TINGLE and BATES), A., i, 54.

***b*-*o*-Methoxycinnamamide** (STOERMER, FRIDERICI, BRÄUTIGAM, and NECKEL), A., i, 296.

***m*-Methoxycinnamic acid**, methyl ester (POSNER), A., i, 53.

***m*-Methoxycinnamic acid**, 4:6- dihydroxy- (MOORE), T., 1046; P., 119.

***p*-Methoxycinnamic acid**, disulphide of (CURTIUS and KASTNER), A., i, 333.

***p*-Methoxyallocinnamic acid** and its derivatives (STOERMER, FRIDERICI, BRÄUTIGAM, and NECKEL), A., i, 297.

2-Methoxydibenzyl, 4'-hydroxy- (STOERMER and FRIEMEL), A., i, 633.

4-Methoxydiethylphthalide and its mononitro-derivative (BAUER), A., i, 871.

3-Methoxydihydrobenzopyrone (TSCHITSCHIBABIN and NIKITIN), A., i, 1007.

7-Methoxy-3,4-dihydro-1,4-benzopyrone (TSCHITSCHIBABIN and NIKITIN), A., i, 1007.

2'-Methoxydiphenylacetamide, 4-hydroxy- (BISTRZYCKI, PAULUS, and PERRIN), A., i, 869.

2'-Methoxydiphenylacetic acid, 2-hydroxy-, lactone of (BISTRZYCKI, PAULUS, and PERRIN), A., i, 869.

4'-Methoxydiphenylacetic acid, 4-hydroxy- (BISTRZYCKI, PAULUS, and PERRIN), A., i, 868.

4'-Methoxydiphenylacetone, 4-hydroxy-, and its acetyl derivative (BISTRZYCKI, PAULUS, and PERRIN), A., i, 868.

3:4-dihydroxy-, and its diacetate (BISTRZYCKI, PAULUS, and PERRIN), A., i, 868.

$\alpha$ -Methoxy- $\alpha$ -diphenylethane,  $\beta$ -nitro-stereoisomeric, preparation of (HEIM), A., i, 717.

$\beta$ -Methoxydiphenylphthalide (MEYER and FISCHER), A., i, 723.

2'-Methoxydiphenylsulphone-2-sulphonic acid (FRIES and VOGT), A., i, 557.

2'-Methoxydiphenylsulphone-2-sulphonic acid, and its anilide (FRIES and VOGT), A., i, 557.

2'-Methoxydiphenylsulphone-2-sulphonyl chloride (FRIES and VOGT), A., i, 557.

3-Methoxy-1:4-diphenyl-1:2:4-triazolone (BUSCH and LIMPACH), A., i, 335.

2-Methoxy-4'-ethoxystilbene (STOERMER and FRIEMEL), A., i, 632.

Methoxyl group, estimation of, in soils (SHOREY and LATHROP), A., ii, 327.

4-Methoxy-1-methylanthraquinone (FISCHER and SAPPER), A., i, 280.

3-Methoxy-5-methyl-2-trichloromethylphthalide (MELDRUM), T., 1716.

5-Methoxy-3-methyl-2-trichloromethylphthalide (MELDRUM), T., 1716.

3-Methoxy-4:5-methylenedioxy-1- $\beta$ -methylaminoethylbenzene, 2-cyano-, and its salts (RABE and McMILLAN), A., i, 77.

2'-Methoxy-3-methyldiphenylacetamide, 4-hydroxy- (BISTRZYCKI, PAULUS, and PERRIN), A., i, 869.

4'-Methoxy-5-methyldiphenylacetamide, 2-hydroxy-, and its derivatives (BISTRZYCKI, PAULUS, and PERRIN), A., i, 869.

2'-Methoxy-3-methyldiphenylacetic acid, 4-hydroxy-, lactone of (BISTRZYCKI, PAULUS, and PERRIN), A., i, 869.

2'-Methoxy-5-methyldiphenylacetic acid, 2-hydroxy-, and its derivatives (BISTRZYCKI, PAULUS, and PERRIN), A., i, 869.

4'-Methoxy-3-methyldiphenylacetic acid, 4-hydroxy- (BISTRZYCKI, PAULUS, and PERRIN), A., i, 868.

4'-Methoxy-5-methyldiphenylacetic acid, 2-hydroxy- (BISTRZYCKI, PAULUS, and PERRIN), A., i, 868.

4'-Methoxy-3-methyldiphenylacetone, 4-hydroxy-, and its acetyl derivative (BISTRZYCKI, PAULUS, and PERRIN), A., i, 868.

2-Methoxy-3:4-methylenedioxy-6- $\beta$ -dimethylaminoethylstilbene, 2':4'- and 2:6'-dinitro- and derivatives (HOPE and ROBINSON), T., 2127, 2129.

8-Methoxy-8:7-methylenedioxy-1-phenyl-2-methyl-1:2-dihydroisoquinoline (FREUND and LEDERER), A., i, 910.

2-Methoxy-3:4-methylenedioxy-6-vinylstilbene, 2':4'-dinitro- (HOPE and ROBINSON), T., 2130.

5-Methoxy-3-methylphthalic acid and its anhydride (MELDRUM), T., 1718.

3-Methoxy-5-methylphthalic acid and its anhydride (MELDRUM), T., 1720.

5-Methoxy-3-methylphthalide (MELDRUM), T., 1718.

3-Methoxy-5-methylphthalide (MELDRUM), T., 1720.

5-Methoxy-3-methylphthalide-2-carboxylic acid and its calcium salt (MELDRUM), T., 1717.

3-Methoxy-5-methylphthalide-2-carboxylic acid, and its calcium salt (MELDRUM), T., 1719.

$\alpha$ -Methoxymethylpyromucic acid (COOPER and NUTTALL), T., 1119 ; P., 134.

1-Methoxynaphthalene, 4-acetylamo- and 4-nitro- (VOROSCHSOFF), A., i, 341.

1-Methoxynaphthalene-4-sulphonic acid, sodium salt (VOROSCHSOFF), A., i, 341.

Methoxynaphthalene-4-sulphonic acid (BARGER and STARLING), T., 2030 ; P., 259.

3-Methoxynaphthylacrylic acid (BARGER and STARLING), T., 2032 ; P., 258.

$\beta$ -2-Methoxynaphthylpropionic acid (BARGER and STARLING), T., 2030 ; P., 258.

$\beta$ -m-Methoxyphenoxypropionic acid (TSCHITSCHIBABIN and NIKITIN), A., i, 1007.

***α-p-Methoxyphenylacetamide***, *α*-amino-, and its derivatives (CLARKE and FRANCIS), T., 323.

***ω-Methoxyphenylacetyl chloride*** (STAUDINGER and KUPFER), A., i, 641.

***η-Methoxy-α-phenyl-η-p-anisyl-Δαγ-heptadien-ε-one***,  $\zeta$ -bromo-, and  $\gamma\zeta$ -dibromo- (BAUER and DIETERLE), A., i, 881.

***η-Methoxy-α-phenyl-η-p-anisyl-Δαγ-heptadien-ε-onephenylhydrazone***,  $\zeta$ -bromo-, and  $\gamma\zeta$ -tribromo- (BAUER and DIETERLE), A., i, 921.

***η-Methoxy-α-phenyl-η-p-anisyl-Δαγ-heptadien-ε-one***,  $\gamma\zeta$ -tribromo- (BAUER and DIETERLE), A., i, 882.

***o-Methoxyphenylcarbithionic acid***. See *o*-Methoxybenzoic acid, *dithio*.

***p-Methoxyphenylcarbithionic acid***. See *Anisic acid, dithio*.

***α-p-Methoxyphenylcoumaric acid*** (STOERMER and FRIEMEL), A., i, 633.

***4'-Methoxy-β-phenylcoumarin***, 4-hydroxy- and its acetyl derivative (BARGELLINI and LEONARDI), A., i, 902.

***4-Methoxy-α-phenylethane***,  $\beta$ -3:5-trinitro- $\alpha$ -hydroxy- (REMFRY), T., 285; P., 21.

***p-Methoxyphenylethyl alcohol*** (AKTIEN-GESELLSCHAFT FÜR ANILIN-FABRIKATION), A., i, 857.

***m-Methoxyphenylethylamine***,  $\alpha$ -*p*-hydroxy-, and its hydrochloride and benzoyl derivatives (MOORE), T., 418; P., 42.

***p-Methoxyphenylhydantoin*** (CLARKE and FRANCIS), T., 324.

***α-Methoxyphenylhydrocoumaric acid*** (STOERMER and FRIEMEL), A., i, 632.

***p-Methoxyphenyl-β-naphthacinchoninic acid, o- and m-hydroxy-*** (PAULY, V. BUTTLAR, and LOCKEMANN). A., i, 787.

***p-Methoxyphenylpropionamide*** (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 629.

***β-Methoxy-β-phenylpropionic acid*** and its methyl ester (SCHRAUTH, SCHOELLER, and STRUENSEE), A., i, 641.

***5-Methoxy-β-phenylpropionic acid, 2:4-dihydroxy***, and its lactone (MOORE), T., 1047; P., 119.

***p-Methoxyphenylisopropyltrimethylammonium iodide*** (ROSEN MUND), A., i, 34.

***p-Methoxyphenylpyruvic acid*** (WAKEMAN and DAKIN), A., ii, 417.

***5-Methoxy-3-phenyl-1:3:4-thiodiazole-2-anil*** (BUSCH and LIMPACH), A., i, 334.

***6-Methoxyphenylthioglycol-o-carboxylic acid*** (KALLE & Co.), A., i, 666.

***4-Methoxyphthalic anhydride***, action of magnesium organic compounds on (BAUER), A., i, 871.

***β-Methoxypropionic acid***, methyl ester (PALOMAA and KILPI), A., i, 176.

***4-Methoxypropylbenzene***, 3-nitro- (THOMS and DRAUZBURG), A., i, 716.

***6-Methoxyquinoline***, absorption spectrum of (DOBIE and FOX), P., 235.

***p-Methoxysalicylaldehyde***, occurrence of in a species of *Chlorocodon* (GOULDING and PELLY), P., 235.

***p-Methoxysalicylideneaniline*** (GOULDING and PELLY), P., 235.

***2-Methoxystilbene***, 4'-hydroxy- (STOERMER and FRIEMEL), A., i, 632.

***4-Methoxystyrene***,  $\omega$ -3-dinitro- (REMFRY), T., 286; P., 21.

***2-m-Methoxystyryl-4-quiazolone***, *p*-hydroxy- (BOGERT, BELL, and AMEND), A., i, 162.

***p-Methoxystyryl β-styrylvinyl ketone***, bromides of (BAUER and DIETERLE), A., i, 881.

***Methoxysulphonic acid***, yttrium salt (PRATT and JAMES), A., ii, 893.

***p-Methoxythiobenzoyl disulphide*** (HÖHN and BLOCH), A., i, 50.

***2'-Methoxy-2-thioldiphenylsulphone*** and its methyl ether (FRIES and VOGT), A., i, 557.

***5-Methoxy-m-tolanic acid*** and its methyl ester (MELDRUM), T., 1716.

***2-Methoxy-p-toluidine*** and its acetyl derivative (BLANKSMA), A., i, 62.

***3:5-dinitro*, and its acetyl derivative (BLANKSMA), A., i, 39.**

***5-Methoxy-1:3:7-trimethylisouric acid*** (BILTZ), A., i, 168.

***4-Methoxytriphenylacetone*** (VORLÄNDER, FRIEDBERG, VAN DER MERVE, ROSENTHAL, HUTH, and v. BODECKER), A., i, 867.

***p-Methoxytriphenylethylene*** (STAUDINGER and KON), A., i, 879.

***α*-(or  $\beta$ )-***Methoxy-β-1:2-triphenyl-3-ethylhydrazimethylene*** (RASSOW and BURMEISTER), A., i, 821.**

***Methyl alcohol***, equilibrium of, with hydrochloric acid and with sulphur dioxide (BAUME and PAMFIL), A., i, 414.

and carbon dioxide or hydrogen sulphide, fusibility curves of mixtures of (BAUME and PERROT), A., ii, 696.

and sulphuric acid, equilibrium in the reaction between (KREMMANN and NEUMANN), A., ii, 28.

distinction between, and ethyl alcohol (KLEIN), A., ii, 340.

**Methyl alcohol**, physiological action of (FORSTER), A., ii, 753.  
 toxicity of (LEWIN), A., ii, 753.

**Methyl ether**, fusibility curves of mixtures of, with acetylene, ethylene and nitric oxide (BAUME and GERMANN), A., i, 830.  
 and carbon dioxide or hydrogen sulphide, fusibility curves of mixtures of (BAUME and PERROT), A., ii, 696.

**Methyl  $\epsilon$ -dimethylaminoamyl ether** (v. (BRAUN), A., i, 613.  
 bromide, preparation of (BYGDEN), A., i, 413.  
 trifluoroethyl ether (SWARTS), A., i, 763.

**Methylacetonylanthranilic acid** (HOU-BEN, ARENDT and ETTINGER), A., i, 129.

**3-Methylacetophenone**,  $\omega$ -chloro-5-amino-, acetyl derivative (KUNCKELL), A., i, 991.

**4-Methylacetophenone**,  $\omega$ -chloro-3-amino-, and  $\omega$ -chloro- $\omega$ -bromo-3-amino-, acetyl derivatives of (KUNCKELL), A., i, 991.

**3-, 4-, and 5-Methylacetophenone**, 2-hydroxy-, and their derivatives (ANSCHÜTZ and SCHOLL), A., i, 316.

**10-Methylacridine**, salts of (KAUFMANN, ALBERTINI, and WIDMER), A., i, 751.

**$\alpha$ -Methyladipic acid**, silver salt (HAWORTH, FERKIN and WALLACH), T., 130.

**$\beta$ -Methyladipic acid**, methyl ester (SEMMLER and MAYER), A., i, 733.

**$\beta$ -Methyl- $\alpha$ -allylbutyric acid**,  $\alpha$ -hydroxy-, and its ethyl ester (DARZENS), A., i, 260.

**1-Methyl-3-allylcyclohexan-3-ol**, and its oxidation products (SAYTZEFF), A., i, 444.

**1-Methyl-3-allyl- $\Delta^1$ -cyclohexen-3-ol** (MATSHUREVITSCH), A., i, 962.

**Methylallylpropylamine** and its platinichloride and aurichloride (EMDE and SCHELLBACH), A., i, 282.

**Methylamine uranyl phosphate** (BARTHE), A., i, 526.

**2:5-p-Methylaminoanil-1-phenyl-2:3-dimethylpyrazole** and its salts and derivatives (MICHAELIS, WURL, and DOEPMANN), A., i, 1041.

**1-Methylaminoanthraquinone** (ULLMANN and FODOR), A., i, 467.  
 4-bromo- (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 469.

**Methyl-2:4-diaminoanisole** (AKTIEN-GESELLSCHAFT FÜR ANILIN-FABRIKATION), A., i, 493.

**5-Methylaminobenzyl-3-methylbenzoic acid**, 2-hydroxy- (ANILINFARBEN & EXTRAKT-FABRIKEN VORM. J. R. GEIGY), A., i, 978.

**$\omega$ -Methylaminobenzylmethylcarbinol** and its hydrochloride (SCHMIDT and CALLIES), A., i, 743.

**$\omega$ -Methylaminobenzylmethyl ketone** and its hydrochloride (SCHMIDT and CALLIES), A., i, 743.

**4-Methylamino-3:3'-dimethyldiphenyl-4'-azo-p-dimethylaniline** and its derivatives (RASSOW and BECKER), A., i, 932.

**4-Methylamino-3:3'-dimethyldiphenyl-4'-azo- $\beta$ -naphthol** (RASSOW and BECKER), A., i, 932.

**4-Methylamino-3:3'-dimethyldiphenyl-4'-azo- $\beta$ -naphthol-(3:6)-disulphonic acid**, sodium salt (RASSOW and BECKER), A., i, 933.

**4-Methylamino-3:3'-dimethyldiphenyl-4'-diazonium chloride** (RASSOW and BECKER), A., i, 932.

**5-Methylamino-1:3-dimethylhydantoin (accecaffine)** (BILTZ and KREBS), A., i, 241.

**4' (or 2') Methylaminodiphenyl**, 2(or 4)-amino-, and its derivatives (RASSOW and BERGER), A., i, 821.

**4-Methylaminodiphenyl-4'-azo-p-dimethylaniline** and its hydrochloride (RASSOW and BERGER), A., i, 821.

**4(or 5)-Methyl-5 (or 4)- $\beta$ -aminoethyl-glyoxaline** and its salts (EWINS), T., 2057 ; P., 259.

**6-Methylamino-2-ethylthiolyprimidine (JOHNS)**, A., i, 506.

**1-Methylamino-4-methoxyanthraquinone** (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 469.

**2-Methylamino-3-methoxybenzoic acid**. See Damasceninic acid.

**1-Methyl-4- and 5- $\beta$ -aminomethylglyoxaline** and their salts (PYMAN), T., 2182 ; P., 275.

**4(or 5)-Methyl-5-(or 4)-aminomethyl-glyoxaline** and its salts (EWINS), T., 2059 ; P., 259.

**$\alpha$ -Methylamino- $\alpha$ -phenylisopropyl alcohol** and its hydrochloride and platinichloride (EMDE and RUNNE), A., i, 715.

**$\alpha$ -Methylaminopropionic acid**, ethyl ester (ZELINSKY, ANNENKOFF, and KULIKOFF), A., i, 773.

**Methyl- $\beta$ -aminoisopropyl ketone**, salts and derivatives of (GABRIEL), A., i, 213.

**6-Methylamino-2-pyrimidone** and 5-amino- (JOHNS), A., i, 507.

**Methylammonium nitrite** (RÄY and RAK-SHIT), T., 1016; P., 22.

**osmichloride** (GUTBIER and MAISCH), A., i, 18.

**d-Methyl-n-amylcarbinol** and its hydrogen phthalate and brucine and strychnine salts of the latter (PICKARD and KENYON), T., 60, 65.

**l-Methyl-n-amylcarbinol** and hydrogen phthalate of, and its cinchonidine salt (PICKARD and KENYON), T., 61, 65.

**Methyl-n-amylcyanamide** (v. BRAUN), A., i, 611.

**δ-Methyl-Δ<sub>β</sub>-amylene** (GORSKY), A., i, 249.

**1-Methyl-3-isoamylcyclohexane** (MAILHE and MURAT), A., i, 126.

**1-Methyl-3-isoamylcyclohexan-3-ol** and its derivatives (MAILHE and MURAT), A., i, 126.

**1-Methyl-3-isoamylcyclohexene** and its nitrosochloride (MAILHE and MURAT), A., i, 126.

**Methylanhydrocotarninenitromethane** methiodide (HOPE and ROBINSON), T., 2120.

**Methylaniline-2-sulphonic acid**, 4-bromo-, and the corresponding chloride and sulphinic acid (CLAASZ), A., i, 437.

**5-Methylanilino-1-phenyl-3-methylpyrazole**, 4-amino-, 5-p-chloro-, and 5-m- and p-nitro-, and their derivatives (MICHAELIS and ABRAHAM), A., i, 1038.

**5-Methylanilino-1-phenylpyrazole**, and 4-nitroso- (MICHAELIS and WALTER), A., i, 1039.

**Methylanilinostyryl phenyl ketone** (ANDRÉ), A., i, 269.

**5-Methylanilino-1-*o*- and *p*-tolyl-3-methylpyrazole and salts** (MICHAELIS and RISSE), A., i, 1039.

**Methyl-p-anisidine**, and its *N*-nitro-, and *N*-nitroso-derivatives (REVERDIN), A., i, 124.

2:3, 2:5, and 3:5-dinitro- (REVERDIN and DE LUC), A., i, 965.

**1-Methylanthracene**, *α*- and *p*-, and the picrate of the former, and 4-chloro- (FISCHER and SAPPER), A., i, 280.

**Methylantranil**, homology of anthranil with (SCHEIBER), A., i, 915.

**N-Methylantranilic acid**, 5-nitroso-, pyridine salt of (HOUBEN and ARENDT), A., i, 129.

**1-μ-Methylanthrapyrimidine**, 2-bromo-4-amino- (FARBENFABRIKEN VORM. F. BAYER & CO.), A., i, 167.

**6-(7-)-Methylanthraquinone**, 1-, and 2-amino- (BADISCHE ANILIN- & SODA-FABRIK), A., i, 885.

**Methyl-1-anthraquinonylbenzimidazole** (ULLMANN and FODOR), A., i, 468.

**Methylaspartic acid**, ethyl ester (ZELINSKY, ANNENKOFF, and KULIKOFF), A., i, 773.

**Methylatropinium**, salts of (GERBER) A., i, 152.

**N-Methylbenzidine** and its salts and derivatives (RASSOW and BERGER), A., i, 821.

**2-Methylbenzimidazole** (BORSCHE and RANTSCHEFF), A., i, 330.

oxide, and its salts (v. NIEMENTOWSKI), A., i, 85.

**5-Methylbenzimidazolone** (ELBS and SCHUSTER), A., i, 192.

**3-Methylbenzotetronic acid**. See 8-Methylcoumarin, 4-hydroxy-.

**d- and l-1-Methyl-4-bromomethylene-cyclohexane**, rotatory power of (PERKIN and POPE), T., 1523.

**1-Methyl-4-bromomethylcyclohexane**, 4-bromo- (PERKIN and POPE), T., 1523.

**Methylbrucine**, acetyl derivative of (LEUCHS and ANDERSON), A., i, 1018.

**γ-Methylbutane-αβδ-tricarboxylic acid**, and its ethyl ester and cyano-, ethyl ester (HOPE and PERKIN), T., 762; P., 95.

**β-Methylbutan-β-ol-γ-one** (*trimethylketol*), phenylmethylhydrazone, and other derivatives (DIELS and JOHLIN), A., i, 254.

**β-Methylbutan-γ-one**, β-hydroxyl-amino-, and its oxime and derivatives, and β-hydroxy-, oxime, and β-nitroso-hydroxylamino-, oxime (CUSMANO), A., i, 186.

**β-Methylbutanone-β-ol** and its semicarbazone (GAUTHIER), A., i, 513.

**β-Methyl-Δ<sup>α</sup>-buten-γ-ol** (FARBENFABRIKEN VORM. F. BAYER & CO.), A., i, 598.

**1-Methyl-5-isobutyl-3-allyl-Δ<sup>1</sup>-cyclohexen-3-ol** (MATSCHUREVITSCH), A., i, 962.

**Methyl-n-butylcarbinol**, hydrogen succinate of (PICKARD and KENYON), T., 59.

**d-Methyl-n-butylcarbinol**, and hydrogen phthalate of, and its brucine salt, and the cinchonidine salt of the hydrogen succinate (PICKARD and KENYON), T., 60, 65.

**Methylisobutylcarbinol**, hydrogen succinate of (PICKARD and KENYON), T., 59.

**d- and l-Methylisobutylcarbinols** and their derivatives (PICKARD and KENYON), T., 60.

**β-Methylbutylene βγ-glycol** (CIAMICIAN and SILBER), A., i, 514, 650.

**1-Methyl-4-*tert*-butylcyclohexaneacetic acid** and its ethyl ester and chloride, and hydroxy- (DARZENS and ROST), A., i, 989.

**1-Methyl-3-isobutylcyclohexan-3-ol** (MAILHE and MURAT), A., i, 126.

**1-Methyl-3-*tert*-butylcyclohexan-6-one** (DARZENS and ROST), A., i, 290.

**$\alpha$ -Methylbutylmalonic acid** (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 259.

**1-Methylcaffolide** (BILTZ and TOPP), A., i, 692.

**Methylcarbamidecarboxylic acid**, esters of (MAUGUIN), A., i, 358.

**o-2-Methylcarbonatobenzyloxybenzoic acid** (EINHORN, HAAS, v. BAGH, LADISCH, and ROTHLAUF), A., i, 302.

**3-Methylcarbonato-4-hydroxybenzoic acid** (FISCHER and FREUDENBERG), A., i, 875.

**4-Methylcarbonato-3:5-dinitro-1-propylbenzene** (THOMS and DRAUZBURG), A., i, 716.

**d-1-Methyl-4-chlorobromomethylcyclohexane, 4-chloro-** (PERKIN and POPE), T., 1528.

**1-Methyl-4- $\beta\beta$ -dichloroethylbenzene, 5-chloro-** (AUWERS), A., i, 383.

**3-Methyl-5-chloromethylbenzoic acid, 2-hydroxy-** (ANILINFARBEN- & EXTRAKT-FABRIKEN VORM. J. R. GEIGY), A., i, 978.

**4(or 5)-Methyl-5(or 4)-chloromethylglyoxaline** and its hydrochloride (EWINS), T., 2056; P., 259.

**1-Methyl-1-dichloromethylcyclohexadiene- $\Delta^4$ -acetic acid** and its ethyl ester (AUWERS), A., i, 298.

**1-Methyl-1-dichloromethylcyclohexadiene-4-acetic acid, 4-hydroxy-**, and its ethyl ester (AUWERS), A., i, 298.

**1-Methyl-1-dichloromethyl- $\Delta^{2:5}$ -cyclohexadien-4-one, 5-chloro-, and its semicarbazone, and 3:5-dichloro-** (AUWERS), A., i, 383, 384.

**1-Methyl-1-dichloromethylcyclohexan-4-one, 2:3:5:6-tetrachloro-** (AUWERS), A., i, 384.

**1-Methyl-1-dichloromethyl- $\Delta^2$ -cyclohexen-4-one, 5:6-dichloro-** (AUWERS), A., i, 383.

**1-Methyl-1-dichloromethyl-4-methylen- $\Delta^{2:5}$ -cyclohexadiene, 3-chloro-, and 3:5-dichloro-** (AUWERS), A., i, 383, 384.

**Methylcodeine** methiodide (PSCHOFF, DICKHÄUSER, and D'AVIS), A., i, 908.

**Methylcodeinium salts** (GERBER), A., i, 154.

**4-Methylcoumarandione**, phenylhydrazone of, and their derivatives (AUWERS and APITZ), A., i, 585.

**Methylcodeinium salts** (GERBER), A., i, 154.

**$\alpha$ - and  $\beta$ -Methyl-*o*-coumaric acid** (FRIES and VOLK), A., i, 203.

**6-Methylcoumarin** and nitro- (CLAYTON), P., 246.

**8-Methylcoumarin, 4-hydroxy-, (3-methylbenzotetronic acid)** (ANSCHÜTZ and SCHOLL), A., i, 316.

**7-Methylcoumarin-4-acetic acid**, and its esters (FRIES and VOLK), A., i, 204.

**6-, 7-, and 8-Methylcoumarin-3-carboxylic acid, 4-hydroxy-, methyl esters** (ANSCHÜTZ and SCHOLL), A., i, 316.

**1-Methyl-4- and 5-cyanomethylglyoxaline** and their salts (PYMAN), T., 2179; P., 275.

**4(or 5)-Methyl-5(or 4)-cyanomethylglyoxaline** and its salts (EWINS), T., 2056; P., 259.

**$\beta$ -Methyl- $\Delta\gamma$ -decadiene** (HARDING, WALSH, and WEIZMANN), T., 450.

**Methyl-*n*-decylcarbinol** (PICKARD and KENYON), T., 58.

**d-Methyl-*n*-decylcarbinol** and its hydrogen phthalate and brucine salt of the latter (PICKARD and KENYON), T., 60.

**1-Methyldeoxyxanthine** and its salts (TAFEL and HERTERICH), A., i, 506.

**Methylidiethylhydroxyethylammonium salts** (EMDE and RUNNE), A., i, 718.

**4-Methyl-1:6-dihydro-6-pyrimidone-2-thiolacetic acid**, and its potassium salt and ethyl ester (JOHNSON and SHEPARD), A., i, 924.

**4-Methyl-1:6-dihydro-6-pyrimidone-2- $\alpha$ -thiol- $\beta$ -hydroxyacrylic acid**, ethyl ester (JOHNSON and SHEPARD), A., i, 925.

**4-Methyl-1:6-dihydro-6-pyrimidone-2-thioloxylacetic acid**, diethyl ester and its thiocarbamide-derivative (JOHNSON and SHEPARD), A., i, 925.

**13-Methyl-5-13-dihydroquindolinium**, salts of (FICHTER and ROHNER), A., i, 86.

**1-Methyldihydroquinoline, 6-bromo-8-nitro-2-hydroxy-**, and its methyl and ethyl esters (DECKER, KAUFMANN, PFEIFER, PROHATZKA, and ALBERTINI), A., i, 1025.

**2-Methyldihydroquinoline** hydrochloride and sulphate and dibromo- (HELLER and SCHMEJA), A., i, 748.

**6-Methyldihydroquinoline** (HELLER and SCHMEJA), A., i, 749.

**8-Methyldihydroquinoline** and its hydrochloride (HELLER and SCHMEJA), A., i, 749.

**2-Methyldiphenyl-2'-carboxylic acid,  $\omega$ -hydroxy-**, and its lactone (KENNER and TURNER), T., 2113; P., 262.

**$\beta$ -Methyl- $\Delta^{\alpha\lambda}$ -dodecadiene** (HARDING, WALSH, and WEIZMANN), T., 450; P., 12.

**Methylene derivatives, preparation of** (STAUDINGER and KUPFER), A., i, 702.

**Methyleneacetophenone, hydroxy-, conversion of, into benzoylpyruvic acid** (MUMM and MÜNCHMEYER), A., i, 79.

**5-Methylenearmido-4:5:4':5'-tetrahydro-4:4'-dipyrimidyl, 2:4:6:2':4':5':6-hepta-hydroxy-, and its amide** (HURTELY and WOOTTON), T., 295; P., 2.

**Methyleneanthrone, 9-dibromo-** (KONDO), A., i, 67.

***p*-Methylenebisphenylenemethylethyl-allylammonium salts and their active forms** (FRÖHLICH), A., i, 494.

***p*-Methylenebisphenylenemethylpropyl-allylammonium salts** (FRÖHLICH), A., i, 494.

***p*-Methylenebisphenylenebenzylmethyl-ethylammonium salts** (FRÖHLICH), A., i, 494.

**Methylene blue, action of, on the respiration and fermentation of plants** (PALLADIN, HÜBBENET, and KORSAKOFF), A., ii, 919.

adsorption of, by charcoal (PELET-JOLIVET and SIEGRIST), A., ii, 374.

**Methylene blue M.E.** (CAIN), A., i, 437.

**$\alpha$ -Methylene- $\delta$ -bromovaleric acid** (KIJNER and KLAWIKORDOFF), A., i, 635.

**Methylenecamphor, nitro-** (FORSTER and WITHERS), P., 327.

**Methylenecamphorcyanocarboxylic acid.** See Camphorylidenecyanocrylic acid.

**1:2-Methylenedioxybenzene- $\alpha$ -azonaphthalene, 4-amino-** (MAMELI), A., i, 510.

**1:2-Methylenedioxybenzenediazoamino-benzene** (MAMELI), A., i, 510.

**Methylenedioxybenzosuberone and its semicarbazone** (BORSCHE), A., i, 1019.

**6:7-Methylenedioxy-1-benzyl-3:4-di-hydroisoquinoline and its salts** (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 1015.

**3:4-Methylenedioxybenzyldimethyl-amine and its salts** (TIFFENEAU), A., i, 973.

**6:7-Methylenedioxy-2-benzyl-1-methyl-3:4-dihydroisoquinoline, 2-chloro-** (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 1015.

**3:4-Methylenedioxycinnamic acid, methyl ester** (POSNER), A., i, 53.

**6:7-Methylenedioxy-3:4-dihydroisoquinoline and its picrate** (DECKER), A., i, 906.

**4:5-Methylenedioxy-1- $\beta$ -dimethylaminoethylbenzene, 2-cyano-, and its salts** (RABE and McMILLAN), A., i, 77.

**3:4-Methylenedioxy-2':4':5':2''-4''-5''-hexamethoxytriphenylmethane** (SZÉKI), A., i, 634.

**6:7-Methylenedioxy-1-methyl-3:4-di-hydroisoquinoline and its salts** (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 1015.

**8-Methylenedioxyphenyl- $\Delta^{\alpha}$ -buten- $\delta$ -ol and its oxidation** (KORJUKIN), A., i, 445.

**6:7 Methylenedioxy-1-phenyl-3:4 di-hydroisoquinoline and its methiodide** (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 1015.

**Methylenedioxytetrahydroisoquinoline and its nitrobenzoyl derivative** (PICKET and GAMS), A., i, 483.

**3:4-Methylenedioxy-2':4':5'-trimethoxy-chalkone** (BARGELLINI and AVRUTIN), A., i, 68.

**Methylenedisalicylic acid.** See Methanedisalicylic acid.

**4-Methylene-1-methylcyclohexane, preparation of** (PERKIN and POPE), T., 1514.

**Methylethylacetophenone** (DUMESNIL), A., i, 719.

**1-Methyl-5-ethyl-3-allyl- $\Delta^1$ -cyclohexen-3-ol** (MATSCHUREVITSCH), A., i, 962.

**4-Methylethylaminophenylimino-3-phenylisooxazolone** (MEYER), A., i, 687.

**Methylethylaniline, *p*-nitroso-, and its hydrochloride** (CAIN), A., i, 437.

**$\beta$ -Methyl- $\alpha$ -ethylbutyric acid,  $\alpha$ -hydroxy and its ethyl ester** (DARZENS), A., i, 260.

**Methylethylcarbinol and its hydrogen succinate** (PICKARD and KENYON), T., 59, 64.

**$d$ -Methylethylcarbinol, hydrogen phthalate, and its brucine and strychnine salts** (PICKARD and KENYON), T., 60.

**Methylethylcreatinine platinichloride** (HENZERLING), A., i, 22.

**$\alpha$ -Methyl- $\gamma$ -ethylglutaconic acid, preparation of, and its ethyl ester** (THOLE and THORPE), T., 2205.

**$\beta\beta$ -Methylethylglutaric acid and its anhydride and  $\alpha$ -naphthylamine derivative** (THOLE and THORPE), T., 440.

**$\beta\beta$ -Methylethylglutarimide and its silver salt** (THOLE and THORPE), T., 439.

**Methylethylguanidine platinichloride** (HENZERLING), A., i, 21.

**1-Methyl-3-ethylcyclohexane** (MAILHE and MURAT), A., i, 126.

**1-Methyl-3-ethylcyclohexan-3-ol, derivatives of** (MAILHE and MURAT), A., i, 126.

1-Methyl-3-ethylcyclohexene and its nitrosochloride (MAILHE and MURAT), A., i, 126.

1-Methyl-3-ethylidenecyclohexane and its derivatives (HAWORTH, PERKIN, and WALLACH), T., 127.

**Methylethylmalonylthethylmalonamide** (REMFY), T., 618.

**Methylethylmalonylmalonamide** (REMFY), T., 616.

**Methylethylmalonylcarbinol** (SAYTZEFF and UNANOFF), A., i, 415.

**$\beta$ -Methyl- $\gamma$ -ethylpentane- $\beta\gamma$ -diol** (PARRY), T., 1171; P., 141.

**d-Methylethylphenylphosphine oxide** (MEISENHEIMER and LICHTENSTADT), A., i, 344.

**$\beta\beta$ -Methylethylpropane- $\alpha\gamma\gamma$ -tetracarboxylic acid**, *di*-imino-*di*-imide and *di*-imide of, and their derivatives (THOLE and THORPE), T., 441.

**5-Methyl-2-ethyl-3-pyrazolidone**, 1-nitroso- (MUCKERMANN), A., i, 815.

**$\alpha\beta$ -Methylethylsuccinic acid**, synthesis and resolution of (INGLIS), T., 544; P., 46.

**2-Methylfuran-3-carboxylic acid**, ethyl ester (BENARY), A., i, 320.

**Methylfurfuraldehyde**,  $\omega$ -bromo-, reactions of (COOPER and NUTTALL), T., 1193; P., 134.

hydroxy-, semicarbazone and *p*-bromophenylhydrazone of (BLANKSMA), A., i, 75.

**Methylgelatin** (SKRAUP and BÖTTCHER), A., i, 247.

**Methylglucosamine** hydrochloride (IRVINE, MONICOLL, and HYND), T., 260; P., 223.

**Methylglucoside**, amino-, hydrobromide and hydrochloride (FISCHER and ZACH), A., i, 117.

**$\beta$ -Methyl-d-glucoside**, tetrabenzoyl derivative of (FISCHER and HELFERICH), A., i, 803.

**$\alpha$ -Methylglutaeconic acid**, *cis*- and *trans*-semianilides of (THOLE and THORPE), T., 2231.

4(or 5)-**Methylglyoxaline**, derivatives of (EWINS), T., 2052; P., 259.

4(or 5)-amino-, salts of (PYMAN), T., 2175.

and its salts and derivatives (WINDAUS and OPITZ), A., i, 752.

4(or 5)-chloro-, 4(or 5)-cyano-, 4(or 5)-hydroxy-, and their salts (PYMAN), T., 673; P., 91.

**1-Methylglyoxaline-4-acetic acid** and its ethyl ester and their picrates (PYMAN), T., 2180.

**1-Methylglyoxaline-5-acetic acid** and its picrate (PYMAN), T., 2181.

**Methylglyoxalone**, '4-amino-, salts and derivatives of (FRANCHIMONT and DUBSKY), A., i, 238.

**$\alpha$ -Methylglyoxal- $\alpha$ -oxime- $\beta$ -phenylhydrazone** (BÜLOW and HECKING), A., i, 244.

**$\delta$ -Methylheptan- $\beta\zeta$ -dione** and its disemicarbazone (v. BAEYER and PICCARD), A., i, 901.

**$\beta$ -Methylheptan- $\epsilon$ -one** (isoamylacetone) and its semicarbazone (WALLACH and CHALLENGER), A., i, 472.

**$\delta$ -Methyl- $\Delta\gamma$ -hepten- $\beta\zeta$ -dione** and its disemicarbazone (v. BAEYER and PICCARD), A., i, 901.

**Methylheptenone**, oxidation products of (PRILESCHAEFF), A., i, 604.

**Methylheptylamine** and its salts (v. BRAUN), A., i, 612.

**d-Methyl-n-heptylcarbinol** and its hydrogen phthalate and brucine and strychnine salts of the latter (PICKARD and KENYON), T., 60, 70.

**Methylheptylcyanamide** (v. BRAUN), A., i, 611.

**$\beta$ -Methylhexane**, nitro-derivative of (COSTÄCHESCU), A., i, 101.

**$\beta$ -Methylhexane,  $\beta\epsilon$ -dihydroxy-** (LOSANTSCH), A., i, 804.

**1-Methylcyclohexane**, 1:4-dibromo-, and 1:2:4-tribromo (PERKIN), T., 761.

**1-Methylcyclohexane-2-carboxylic acid**, *trans*-4-bromo-, 5-bromo-, *trans*-1:4- and 3:4-dibromo-, and 4:5-dibromo- (PERKIN), T., 750.

**d-1-Methylcyclohexane-3-carboxylic acid**, 3:4-dibromo- (LUFF and PERKIN), T., 523.

**1-Methylcyclohexane-4-carboxylic acid**, *cis*- and *trans*- forms of, and their *p*-toluidides (CHOU and PERKIN), T., 536.

**d-1-Methylcyclohexane-4-carboxylic acid**, 3-bromo-, and 3:4-dibromo- (CHOU and PERKIN), T., 534.

**1-Methylcyclohexane-3:3-diacetic acid**,  $\alpha\alpha'$ -dicyano-, derivatives of (GUARESCHI), A., i, 793.

**$\alpha\beta$ -1-Methylcyclohexane-3:3-succinimide**,  $\alpha\beta$ -dicyano- (GUARESCHI), A., i, 793.

**d-1-Methylcyclohexan-3-ol-4-carboxylic acid** (CHOU and PERKIN), T., 532.

**1-Methylcyclohexan-3-ol- $\alpha$ -propionic acid** and its silver salt (HAWORTH, PERKIN, and WALLACH), T., 126.

**1-Methylcyclohexan-2-one**, 3-bromo-, 3-chloro-, and 3-hydroxy- (KÖTZ and STEINHORST), A., i, 211.

**1-Methylcyclohexan-3-one**, hydrazone and other derivatives of (MERKIN), A., i, 64.

**1-Methylcyclohexan-3-one**, 4-bromo-, 4-chloro-, and 4-hydroxy- (KÖTZ and STEINHORST), A., i, 211.

**1-Methyl-cyclohexan-4-one**, 3-bromo-, 3-chloro-, and 3-hydroxy- (KÖTZ and STEINHORST), A., i, 211.

**1-Methylcyclohexan-3-one-6-carboxylic acid**, ethyl ester (SKITA and PAAL), A., i, 449.

**β-Methylhexan-3-one-γ-ol** and its semicarbazone (GAUTHIER), A., i, 415.

**1-Methyl-Δ<sup>1</sup>-cyclohexene**, 4-bromo- (PERKIN), T., 760.

**2-, 3-, and 4-Methylcyclohexeneacetyl chlorides** (DARZENS and ROST), A., i, 988.

**cis- and trans-1-Methyl-Δ<sup>3</sup>-cyclohexene-2-carboxylic acid** and their ethyl esters and 2:5-dibromo- (PERKIN), T., 750.

**1-Methyl-Δ<sup>4</sup>-cyclohexene-2-carboxylic acid** and its ethyl ester (PERKIN), T., 754.

**1-Methyl-Δ<sup>5</sup>-cyclohexene-2-carboxylic acid** and its ethyl ester (PERKIN), T., 734 ; P., 95.

**1-Methyl-Δ<sup>6</sup>-cyclohexene-2-carboxylic acid** and its ethyl ester and 1:6-dibromo- (PERKIN), T., 738 ; P., 95.

**dl-Methyl-Δ<sup>3</sup>-cyclohexene-3-carboxylic acid**, resolution of, its optically active components and their ethyl esters (LUFF and PERKIN), T., 521 ; P., 57.

**d-1-Methyl-Δ<sup>3</sup>-cyclohexene-4-carboxylic acid** and its ethyl ester (CHOU and PERKIN), T., 533 ; P., 57.

**1-Methyl-Δ<sup>3</sup>-cyclohexen-2-one** and its semicarbazone (KÖTZ and STEINHORST), A., i, 211.

**1-Methyl-Δ<sup>3</sup>-cyclohexen-3-one** and its semicarbazone (KÖTZ and STEINHORST), A., i, 211.

**1-Methyl-Δ<sup>2</sup>-cyclohexen-4-one** and its semicarbazone (KÖTZ and STEINHORST), A., i, 211.

**1-Methylcyclohexen-3-one-6-carboxylic acid**, ethyl ester (SKITA and PAAL), A., i, 449.

**1-Methyl-Δ<sup>1</sup>-cyclohexenylideneacetic acid**, ethyl ester (AUWERS and EISENLOHR), A., ii, 783.

**β-Methyl-n-hexoamide** (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 259.

**β-Methylhexoic acid**, α-bromo, and α-iodo-, guaiacol esters of (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 630.

**α-cyano-, and its ethyl ester** (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 259.

**1-Methylcyclohexyl-4-acetic acid**, 4-bromo-, preparation of (PERKIN and POPE), T., 1513.

**dl-, d-, and l-Methylcyclohexyl-4-acetic acids**, α- and β-4-dibromo- (PERKIN and POPE), T., 1518.

**4-Methylcyclohexylacetyl chloride** (DARZENS and ROST), A., i, 988.

**γ-Methylhexylamine**, ε-hydroxy-, and its oxalate (WOHL and MAAG), A., i, 25.

**d-Methylhexylcarbinol**, salts of (HILDITCH), T., 222 ; P., 6.

**d-Methyl-n-hexylcarbinol**, strychnine salt of the hydrogen phthalate of (PICKARD and KENYON), T., 61.

**l-1-Methylcyclohexyl-4-chlorobromoacetic acid**, 4-chloro- (PERKIN and POPE), T., 1527.

**Methylcyclohexylhydrazine**, derivatives of (MERKIN), A., i, 64.

**1-Methylcyclohexylidene-4-acetic acid**, molecular configuration of (EVEREST), P., 285.

optically active derivatives of (PERKIN and POPE), T., 1510 ; P., 212.

**d-1-Methylcyclohexylidene-4-acetic acid**, rotatory power of (PERKIN and POPE), T., 1525.

**d-and l-1-Methylcyclohexylidene-4-bromoacetic acid** (PERKIN and POPE), T., 1524.

**Methylcyclohexylmethylcyclohexylidenehydrazine** (MERKIN), A., i, 64.

**4-Methylhydantoin**, 2-thio- (WHEELER, NICOLET, and JOHNSON), A., i, 1022.

**1-Methylhydantoylamide**, 5-hydroxy- (BILTZ and TOPP), A., i, 692.

**Methylhydrasteine**, oximino-derivative, (RABE and McMILLAN), A., i, 77.

**1-Methylhydrastinine** hydrochloride (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 1015.

**N-Methylhydrazobenzene** (RASSOW and BERGER), A., i, 821.

**N-Methylhydrazo-o-toluene** (RASSOW and BECKER), A., i, 932.

**3-[2-Methylhydrocoumarilyl]-4-methylcoumarin** (FRIES and VOLK), A., i, 203.

**1-[2-Methylhydrocoumarilyl]-2-methylhydrocoumarone** and its oxime (FRIES and VOLK), A., i, 203.

**α-Methylhydrohydrastinine** and its salts (FREUND and LEDERER), A., i, 906.

**4-Methyl-2-hydroxy-1-aminothionaphthen**, dibenzoyl derivative of (AUWERS and ARNDT), A., i, 588.

**Methylhydroxycamphor**, nitro- (FORTER and WITHERS), P., 327.

**1-Methyl-3-α-hydroxyethylcyclohexan-3-ol** (HAWORTH, PERKIN, and WALKACH), T., 128.

3-Methyl-5-hydroxymethylbenzoic acid, 2-hydroxy-, and its anhydride (ANILINFARBEN & EXTRAKT-FABRIKEN VORM. J. R. GEIGY), A., i, 978.

4 (or 5)-Methyl-5 (or 4)-hydroxymethylglyoxaline and its salts (EWINS), T., 2055 ; P., 259.

β-Methyl-γ-hydroxyisopropyladipic acid lactone of, and its ethyl ester (PERKIN), T., 758.

*d*-1-Methyl-3-α-hydroxyisopropylcyclohexan-3-ol (HAWORTH, PERKIN, and WALLACH), T., 132.

α-Methylimino-β-benzoylpropionic acid, (MUMM and MÜNCHMEYER), A., i, 79.

α-Methylimino-β-benzoylpropionitrile (MUMM and MÜNCHMEYER), A., i, 79.

Methyliminophthalanil (REISSERT and HOLLE), A., i, 982.

Methylindanthren (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 925.

2-Methylindole, oxidation of (PLANCHER and COLACICCHI), A., i, 566.

4-nitro-1-hydroxy-, and its methyl ether (BORSCHE and RANTSCHEFF), A., i, 332.

3-Methylindole. See Scatole.

2-Methylindole-3-aldehyde phenylhydrazone (KÖNIG), A., i, 809.

2-Methylindole-3-aldoxime (KÖNIG), A., i, 809.

2-Methylindole-3-carboxylic acid, 4-amino-, ethyl ester (BORSCHE and RANTSCHEFF), A., i, 332.

1-Methylisatin-2-anil (PUMMERER and GRUBE), A., i, 231.

Methylketen, preparation of (STAUDINGER, KLEVER, and MAYER), A., i, 307.

Methyl ketones, synthesis of (BARBIER and LOCQUIN), A., i, 708, 725.

2-Methyl-laurenone (2:3:8:4-tetra-methyl-Δ<sup>1</sup>-cyclopentenone-5), and its derivatives (LOCQUIN), A., i, 792.

1-Methyl-3-methenyl-1-cyclohexene (AUWERS and EISENLOHR), A., ii, 782.

4 (or 5)-Methyl-5 (or 4)-methylamino-methylglyoxaline and its salts (EWINS), T., 2058 ; P., 259.

β-Methyl-ε-methylene-Δ<sub>γ</sub>-hexinene-β-ol (DUPONT), A., i, 174.

4-Methyl-*o*-methylenequinone, 3:5:6-tribromo- (ZINCKE and BREITWEISER), A., i, 216.

Methylmorphimethine methyl ether, salts of (KNORR and ROTH), A., i, 1015.

Methylmorphinium methosulphite (GERBER), A., i, 154.

Methylapomorphinium salts (GERBER), A., i, 154.

1-Methylnaphthalene, *ω-ω*-2-trichloro- (SACHS and BRIGL), A., i, 720.

Methylnaphthaphenazonium, 1:3-di-amino-, salts (KEHRMANN and RIERA Y PUNTI), A., i, 928.

Methylnarcotine methiodide (RABE and McMILLAN), A., i, 78.

Methylnarcotinium salts (GERBER), A., i, 154.

Methyl-α-nitroisobutyric acid (STEINKOFF and SUPAN), A., i, 946.

4-Methylnitrosoamino-3:3'-dimethyl-diphenyl-4'-azo-β-naphthol (RASSOW and BECKER), A., i, 932.

4-Methylnitrosoamino-3:3'-dimethyl-diphenyl-4'diazonium chloride (RASSOW and BECKER), A., i, 932.

4-Methylnitrosoaminodiphenyl-4'-azo-*p*-dimethylaniline and its hydrochloride (RASSOW and BERGER), A., i, 821.

4-Methylnitrosoaminodiphenyl-4'-diazonium chloride (RASSOW and BERGER), A., i, 821.

Methyl-*n*-nonylcarbinol, hydrogen succinate of (PICKARD and KENYON), T., 59.

*d*-Methyl-*n*-nonylcarbinol and its hydrogen phthalate and brucine and strychnine salts of the latter (PICKARD and KENYON), T., 60, 70.

Methylnorhemipinanyl, 6-nitro-, and its acetyl derivative (WEGSCHEIDER and KLEMENC), A., i, 542.

Methylnorhemipin-1-anilic acid, 6-nitro-, and its salts and methyl ester (WEGSCHEIDER and KLEMENC), A., i, 541.

Methylnorhemipin-2-anilic acid, 6-nitro- (WEGSCHEIDER and KLEMENC), A., i, 541.

Methylnorhemipinic acid, 6-nitro-, dimethyl ester (WEGSCHEIDER and KLEMENC), A., i, 542.

*d*-Methyl-*n*-octylcarbinol and its hydrogen phthalate and brucine and strychnine salts of the latter (PICKARD and KENYON), T., 60, 70.

5-Methylisooxazole, synthesis of (CLAISEN), A., i, 491.

3-Methylisooxazole-4-azobenzene-4-*p*-azosalicylic acid, 5-hydroxy- (BÜLOW and HAAS), A., i, 340.

γ-Methylisooxazolone and its *C*-methyl derivative (OLIVERI-MANDALÀ and COPPOLA), A., i, 492.

1-Methyloxindole-3-aldehyde and its derivatives (FRIEDEMÄNDER and KIELBASINSKI), A., i, 1022.

*b*-*o*-Methyloxyeinnamic acid, ethyl ester (STOERMER, FRIDERICI, BRÄUTIGAM, and NEOKEL), A., i, 297.

**Methyl-*n*-pentadecylcarbinol** and its salts (PICKARD and KENYON), P., 313.

**Methyl-*n*-pentadecyl ketone** and its semicarbazone (PICKARD and KENYON), P., 313.

**$\delta$ -Methyl- $\Delta^5$ -pentadiene** (KIJNER and KLAWIKORDOFF), A., i, 635.

**$\beta$ -Methylpentan- $\beta\delta$ -diol** and its derivatives (BOUVEAULT and LOCQUIN), A., i, 2.

**$\beta$ -Methylpentan- $\gamma\delta$ -diol** (UMNOVA), A., i, 250.

**$\beta$ -Methylpentane,  $\beta\epsilon$ -dibromo-** (KIJNER and KLAWIKORDOFF), A., i, 635.

**$\delta$ -iodo-** (UMNOVA), A., i, 250.

**1-Methylcyclopentane-2-carboxylic acid**, 4-bromo-, ethyl ester (HOPE and PERKIN), T., 771.

**1-Methylcyclopentan-4-ol-2-carboxylic acid** and its ethyl ester (HOPE and PERKIN), T., 770.

**$\gamma$ -Methylpentan- $\gamma$ -ol- $\delta$ -one** (*dimethyl-ethylketol*) and its derivatives (DIELS and JOHLIN), A., i, 254.

**1-Methylcyclopentan-3-one**, catalytic reduction of (ZELINSKY), A., i, 988.

**1-Methylcyclopentan-2-one-4-carboxylic acid** and its ethyl ester and derivatives (HOPE and PERKIN), T., 774.

**1-Methylcyclopentan-4-one-2-carboxylic acid** and its ethyl ester and derivatives (HOPE and PERKIN), T., 769.

**1-Methylcyclopentan-2-one-3:4-dicarboxylic acid**, ethyl ester (HOPE and PERKIN), T., 774.

**1-Methylcyclopentan-4-one-2:3- or 2:5-dicarboxylic acid**, ethyl ester, and its semicarbazone (HOPE and PERKIN), T., 768.

**$\beta$ -Methylpentan- $\gamma$ -one- $\beta$ -ol** (GAUTHIER), A., i, 513.

**$\gamma$ -Methylpentanone- $\gamma$ -ol** (GAUTHIER), A., i, 513.

**Methylpentosans**, estimation of, in cereals and in wood fungi (ISHIDA and TOLLENS), A., ii, 645.

**Methylphæophorbide** (WILLSTÄTTER and STOLL), A., i, 143.

**2-Methylphenanthrene**, and 4-hydroxy-, and its acetyl derivative (BEHREND and KLINCKHARD), A., i, 294.

**3-Methylphenothioxin** (AKTIEN-GESELLSCHAFT FÜR ANILIN-FABRIKATION), A., i, 903.

**1-Methyl-4-isopropyl-3-allylcyclohexan-3-ol**, oxidation of and halogen derivatives of (SAYTZEFF), A., i, 474.

**1-Methyl-5-propyl-3-allyl- $\Delta^1$ -cyclohexen-3-ol** (MATSCHUREVITSCH), A., i, 962.

**1-Methyl-5-isopropyl-3-allyl- $\Delta^1$ -cyclohexen-3-ol** (MATSCHUREVITSCH), A., i, 962.

**Methyl-*n*-propylcarbinol**, hydrogen succinate of (PICKARD and KENYON), T., 59.

**$d$ -Methyl-*n*-propylcarbinol**, and its hydrogen phthalate and brucine and strychnine salts of the latter (PICKARD and KENYON), T., 60, 65.

**Methylisopropylcarbinol**, rotation of (PICKARD and KENYON), P., 324.

**$\beta$ -Methyl- $\gamma$ -propylhexan- $\beta\gamma$ -diol** (PARRY), T., 1171; P., 141.

**1-Methyl-3-propylcyclohexane** (MAILHE and MURAT), A., i, 126.

**1-Methyl-3-propylcyclohexan-3-ol**, derivatives of (MAILHE and MURAT), A., i, 126.

**1-Methyl-5-isopropylcyclohexan-2-ol** (WALLACH and VIRCK), A., i, 313.

**1-Methyl-2-isopropylcyclohexan-5-one** and its oxime and benzylidene derivative (KÖRTZ and ANGER), A., i, 310.

**1-Methyl-5-isopropylcyclohexan-2-one** (WALLACH and VIRCK), A., i, 313.

**1-Methyl-3-propylcyclohexene** and its nitrosochloride (MAILHE and MURAT), A., i, 126.

**1-Methyl-5-propyl- $\Delta^1$ -cyclohexen-3-one** (MATSCHUREVITSCH), A., i, 962.

**1-Methyl-3-isopropylcyclopentan-1-ol** (WALLACH and OLDENBERG), A., i, 311.

**1-Methyl-3-isopropyl- $\Delta^5$ -cyclopentene** and its derivatives (WALLACH), A., i, 310.

**1-Methyl-3-isopropylcyclopentylmethylamine** and its derivatives (WALLACH and OLDENBERG), A., i, 311.

**3-Methylpyrazole-4-azobenzene-4'-*p*-azosalicylic acid**, 5-hydroxy- (BÜLOW and HAAS), A., i, 339.

**5-Methyl-3-pyrazolidone**, 1-nitroso-, and its salts (MUCKERMANN), A., i, 814.

**3-Methyl-5-pyrazolone**, 4-bromo-, and 4:4-dibromo- (MUCKERMANN), A., i, 815.

**5-Methylpyridazin-6-one-3-carboxylic acid** (BLAISE and GAULT), A., i, 520.

**1-Methyl-2-pyridone**, 3-bromo-, and 3:5-dibromo- (DECKER, KAUFMANN, SASSU and WISLOKI), A., i, 1024.

**3-Methyl- $\alpha$ -pyrone**, 6-chloro, and 6-hydroxy- (THOLE and THORPE), T., 2223.

**2-Methylpyrrole-3-carboxylic acid**, ethyl ester (BENARY), A., i, 319.

**4-Methyl-5-pyrrolidone**, 2-imino-4-cyano-4-cyano- (THOLE and THORPE), T., 1687.

**Methylquinolanol**, dinitro-, and its derivatives (KAUFMANN and STRÜBIN), A., i, 321.

**Methylquinoline oxide**, dinitro- (KAUFMANN and STRÜBIN), A., i, 323.

**2-Methylquinoline** (*quinaldine*), mechanism of the synthesis of (JONES and EVANS), T., 334; P., 43.

**5-Methylquinoline** and its salts (v. JAKUBOWSKI), A., i, 82.

**5-Methylquinoline-8-carboxylic acid** and its salts (v. JAKUBOWSKI), A., i, 81.

**2-Methylisoquinolinium picrate** (DECKER and KAUFMANN), A., i, 1023.

*meri***Methylquinonedi-imonium bromide** (PICCARD), A., i, 569.

**Methyl-red** and its salts and derivatives (HOWARD and POPE), T., 1333; P., 206.

**Methylisoparteine** and its picrate and methiodide (MOUREU and VALEUR), A., i, 319, 562.

**Methylsuccinic acid**, condensation of its naphthaldehyde with (BEHREND and KLINCKHARD), A., i, 294.

**Methylsulphonic acid**, yttrium salt (PRATT and JAMES), A., ii, 893.

**2-Methyltetrahydroquinoline** (*tetrahydroquinaldine*), *d*- and *l*-, physiological action of (DALE and MINES), A., ii, 636.

**2-Methyltetrahydrothiophen** and its derivatives (v. BRAUN), A., i, 75.

**4-Methyl-2(tetrahydro-2'-thio-6'-pyrimidinethiol)-1:6-dihydro-6-pyrimidone** (JOHNSON and SHEPARD), A., i, 925.

**1-Methyltetrone-4-carboxylic acid**, ethyl ester (BENARY), A., i, 673.

**Methyltetric acid** (BENARY), A., i, 673.

**Methylthebanium salts** (GERBER), A., i, 154.

**N-Methylthiodiphenylamine-2:7-diphthaloylic acid** (SCHOLL, SEER, and TRITSCH), A., i, 558.

*r-a***Methylthiohydantoic acid** and its barium salt (KOMATSU), A., i, 684.

*2*- and *v-5***Methylthiohydantoin** (KOMATSU), A., i, 684.

**1-Methylthiobenzene**, 4-iodo- and its derivatives (ZINCKE and JÖRG), A., i, 40.

**p-Methylthiobenzoic acid** (ZINCKE and JÖRG), A., i, 40.

**p-Methylthiobenzonitrile** (ZINCKE and JÖRG), A., i, 40.

**3-Methylthiobenzyl acetate**, 2:5-dibromo-4-hydroxy-, and its diacetyl derivative (ZINCKE, FROHNEBERG, and KEMPF), A., i, 440.

**3-Methylthiobenzyl alcohol**, 2:5-dibromo-4-hydroxy-, and its methyl ester (ZINCKE, FROHNEBERG, and KEMPF), A., i, 440.

**5-Methylthiol-*o*-cresol**, 3-bromo-, 3:6-dibromo-, and 3-nitro-, and their derivatives (ZINCKE and BRUNE), A., i, 198.

**3-Methylthiol-*p*-cresol**, 5-bromo-, and 2:5-dibromo-, and their derivatives (ZINCKE and KEMPF), A., i, 287.

2:5-dibromo-,  $\psi$ -bromide, and its derivatives (ZINCKE, FROHNEBERG, and KEMPF), A., i, 439.

**4'-Methylthioldiphenylamine**, 4-nitro-2-amino-, and 2:4-dinitro- (ZINCKE and JÖRG), A., i, 40.

**2-Methylthiol-1-phenyl-4-benzylidenehydantoin** (WHEELER and BRAUTLECHT), A., i, 500.

**5-Methylthiol-1-phenyl-3-methylpyrazole** ( $\psi$ -thiopyrine), amino- and nitro-derivatives of (MICHAELIS, GRAFF, GESING and BOIE), A., i, 234.

**4-Methylthionaphthenquinone**, oxime and phenylhydrazone of, and the benzoyl derivative of the latter (AUWERS and ARNDT), A., i, 587.

**5-Methylthiophen-2-aldehyde** and its derivatives (GRISHKEWITSCH-TROCHIMOWSKY), A., i, 806.

**5-Methylthioxanthone**, 2-hydroxy- (CHRISTOPHER and SMILES), T., 2050.

**7-Methylthioxanthone**, 2-amino-, and 2-hydroxy- (CHRISTOPHER and SMILES), T., 2049.

2:3:4-trihydroxy-, and its trimethyl ether (ULLMANN and SONE), A., i, 739.

**N-Methyl-*o*-tolidine** and its salts and derivatives (RASSOW and BECKER), A., i, 932.

**$\beta$ -Methyl- $\gamma$ -*p*-tolylhexane- $\gamma$ - $\epsilon$ -triol** (GRISHKEWITSCH-TROCHIMOWSKY), A., i, 291.

**Methyl-*n*-tridecylcarbinol** and its salts (PICKARD and KENYON), P., 313.

**Methyl-*n*-tridecyl ketone** and its semicarbazone (PICKARD and KENYON), P., 312.

**Methyl-*n*-undecylcarbinol** (PICKARD and KENYON), T., 58.

***d*-Methyl-*n*-undecylcarbinol** and its hydrogen phthalate and brucine and strychnine salts of the latter (PICKARD and KENYON), T. 60.

**Methyluracil**, oxidation and derivatives of (BEHREND and STRUVE), A., i, 158.

3- and **7-Methyluric acid**, oxidation of, in the presence of ammonia (GROHMANN), A., i, 691.

*a***Methylvaleric acid**, *d*bromo- (KIJNER and KLAWKORDOFF), A., i, 635.

**Methylvinylcarbinol** (FARBENFABRIKEN VORM. F. BAYER & CO.), A., i, 599.

**Microchemical studies** (BOLLAND), A., ii, 551.

**Microcline**, distinction between orthoclase and (VERNADSKY and RÉVUTSKY), A., ii, 122; (BARBIER), A., ii, 735.

**Micro-filter** (DONAU), A., ii, 225.

**Micro-organisms**, resistance of, to disinfectants (HAILER), A., ii, 1021.

**Micro-polarisation**. See under Photochemistry.

“**Migrainine**,” estimation of antipyrine in (SLEESWYK), A., ii, 80.

**Milk**, specific gravity of small quantities of (KREIDL and LENK), A., ii, 947.

original acidity of (BORDAS and TOUPAIN), A., ii, 631.

alkaloid from sterilised (AWERKIEFF), A., ii, 751.

use of ammonium acetate and asparagine in production of (MORGEN, BEYER, and WESTHAUSSER), A., ii, 751.

index of oxidation of (JONA), A., ii, 233.

proteins of (BAUER and ENGEL), A., ii, 307.

fermentation of citric acid in (BOSWORTH and PRUCHA), A., ii, 318.

curdling of, by rennet (BANG), A., i, 826.

sterile and boiled, behaviour of, towards rennet and acid (KREIDL and LENK), A., ii, 1114.

catalase of (SPINDLER), A., ii, 133.

effect of deficiency of calcium and phosphorus on the secretion of (FINGERLING), A., ii, 510.

changes produced in, by bacteria (SCHÖLBERG and WALLIS), A., ii, 512.

cow's, distinction between fresh and boiled (NICHOLAS), A., ii, 556.

effect of heat on the peroxydase of (VAN ECK), A., ii, 1144.

variation in the composition of (CROWTHER and RUSTON), A., ii, 510.

response of, to the Schardinger reaction (REINHARDT and SEIBOLD), A., ii, 307, 418.

human, composition of, in nephritis (ENGEL and MURSCHHAUSER), A., ii, 813.

Schardinger's reaction for (RULLMANN), A., ii, 667; (BURRI and SCHMID), A., ii, 1115.

cause of coloration of, with Rothenfusser's reagent (HESSE and KOOPER), A., i, 592.

peroxydase reaction of (GRIMMER), A., i, 936.

**Milk**, estimation of citric acid in (DESMOULIÈRE), A., ii, 548.

estimation of fat in (JONA), A., i, 234; (OERUM), A., ii, 943.

estimation of lactose in (VITOUX), A., ii, 74; (JONA), A., ii, 234.

estimation of nitrates in (TILLMANS and SPITZGERBER), A., ii, 1132.

detection and estimation of nitric acid in (TILLMANS), A., ii, 151.

estimation of phosphorus in the ash of (BORDAS and TOUPLAIN), A., ii, 438, 535; (FLEURENT and LÉVI), A., ii, 535.

estimation of proteins in (RICHMOND), A., ii, 236.

influence of potassium dichromate on the analytical constants of (GARNIER), A., ii, 161.

**Mineral**, new, from Brazil (PADUA E CASTRO), A., ii, 735.

waters. See under Water.

**Minerals**, formation of, during sintering (JESSER), A., ii, 500.

association of lead with uranium in, and the measurement of geological time (HOLMES), A., ii, 570.

ratio of lead to uranium in, and its application to measurement of geological time (ZAMBONINI), A., ii, 959.

application of the phase rule to associations of (GOLDSCHMIDT), A., ii, 991.

action of cathode rays on (POCHINETTO), A., ii, 357.

coloration of, by cathode rays (DOELTER), A., ii, 569.

variation of the refractive index of, with temperature (LIEBREICH), A., ii, 165.

melting-points of (DAY and SOSMAN), A., ii, 496.

specific heats of, at high temperatures (LASCHTSCHENKO), A., ii, 253.

solid solution in (FOOTE and BRADLEY), A., ii, 122.

chemical effects of pressure in (SPEZIA), A., ii, 903.

containing aluminium silicate in soils (VAN DER LEEDEN), A., ii, 299.

containing helium, composition of (LANGE), A., ii, 499.

from Arizona and California, crystallography of (GUILD), A., ii, 902.

from the mine of Calabona (SERRA), A., ii, 294.

from Hungary, analysis of (V. KALECSINSZKY), A., ii, 47.

containing lead and zinc from Kansas, Missouri (ROGERS), A., ii, 900.

Mexican (UNGEMACH), A., ii, 614.

of the olivine group (BACKLUND), A., ii, 616.

**Minerals.** Trans-Baikal (KUSNETZOFF), A., ii, 1104.  
 platiniferous, of the Urals (DUPARC), A., ii, 733.  
 of Ytterby, Sweden (NORDENSKJÖLD), A., ii, 296.  
 radioactive. See under Photochemistry.  
 detection of, by colour reactions (GAUBERT), A., ii, 337.  
 estimation of radium in (JOLY), A., ii, 685.  
 estimation of free sulphur in (LÉVY-W.), A., ii, 1130.  
 See also Pyroxene minerals.  
**Mines,** analyses of gases from (MOUREU and LEPAPE), A., ii, 1087.  
**Minimum,** law of (MITSCHERLICH), A., ii, 760.  
**Mispickel,** effect of heat on, and its structure (BEUTELL), A., ii, 485.  
**Mixtures,** critical phenomena of dissolution of (TIMMERMANS), A., ii, 193.  
 binary, refractive index of (MAZZUCHELLI), A., ii, 781.  
 relation between density and magnetic rotation of (SCHWERS), A., ii, 92.  
 of liquids, laws of distillation of (MARILLER), A., ii, 254.  
 relation of vapour pressure to specific gravity in (DOROSCHENSKY), A., ii, 698.  
 viscosity of (DRAPIER), A., ii, 968.  
 of liquefied gases (BAGSTER), T., 1218; P., 141.  
 vapour pressures of (KOHNSTAMM), A., ii, 93.  
 viscosity and fluidity of (DRUCKER and KASSEL), A., ii, 373.  
 investigation of the opalescence in, by means of the cardioid ultramicroscope (v. LEPKOWSKI), A., ii, 95.  
 analysis of, based on the law of mass action (OSTROMISSLENSKY), A., ii, 476.  
 of the chlorides of univalent metals, thermal analysis of (SANDONNINI), A., ii, 800.  
 dissociating, density, refractivity and magnetic rotation of (SCHWERS), A., ii, 92.  
 quantitative chemical analysis of (FRIEDENTHAL), A., ii, 555; (RAKUSIN), A., ii, 774.  
**Molasses,** preparation of guanine pentoside from (ANDRLÍK), A., i, 397.  
**Moldavite,** new type of (WEINSCHENK STBINMETZ), A., ii, 501.

**Molecular association** and its relation to electrolytic dissociation (TURNER), T., 880; P., 40.  
 in water (PEDDLE and TURNER), T., 683; P., 8.  
 attraction (MILLS), A., ii, 710, 711.  
 relation between the physical constants and (KLEEMAN), A., ii, 257.  
 and the properties of liquids (KLEEMAN), A., ii, 966.  
 complexity, relation between transport numbers and (MAZZUCHELLI), A., ii, 962.  
 of liquids (GUYE), A., ii, 1067.  
 of salts in phenol (HARTUNG), A., ii, 697.  
 heat. See under Thermochemistry.  
 rotation. See under Photochemistry.  
 symmetry, influence of, on optical activity of aromatic position-isomericides (HILDITCH), A., i, 892.  
 vibrations of solids (STEIN), A., ii, 84.  
 weights. See Weights, molecular.  
**Molecule,** magnetic property of the (WEISS), A., ii, 91.  
 the attraction constant of a, in relation to its chemical properties (KLEEMAN), A., ii, 34.  
**Molecules,** size of (DEBYE), A., ii, 34; (PERRIN), A., ii, 480, 594.  
**Molengraaffite** from the Transvaal (BROUWER), A., ii, 296.  
**Molybdates.** See under Molybdenum.  
**Molybdenite,** analysis of (TRAUTMANN), A., ii, 230.  
**Molybdenum alloys** with nickel (BAAR), A., ii, 611.  
**Molybdenum :**  
**Molybdic acid,** complex derivatives of (MAZZUCHELLI), A., i, 10; (MAZZUCHELLI and BORGHI), A., i, 11.  
 guanidinium salt (ROSENHEIM and PINSKER), A., i, 266.  
**Molybdates,** complex, of the rare earths (BARBIERI), A., ii, 291.  
**Molybdenum,** estimation of, volumetrically (KNECHT and ATACK), A., ii, 337.  
 estimation of silicon in, and in its iron alloys (TRAUTMANN), A., ii, 538.  
**Molybdic acid.** See under Molybdenum.  
**Molybdophosphoric acid,** guanidinium salt of (ROSENHEIM and PINSKER), A., i, 266.  
**Molybdisilicic acid,** guanidinium salt of (ROSENHEIM and PINSKER), A., i, 266.  
**Molybdotartaric acid,** ammonium salt (MAZZUCHELLI and BORGHI), A., i, 11.  
**Monazite sands,** analysis of (CHESNEAU), A., ii, 925.

**Montanone** and its derivatives (EASTERFIELD and TAYLOR), T., 2302; P., 279.

**Montmorillonite**, composition of (THUGUTT), A., ii, 210; (STREMME), A., ii, 406.

colour reactions of (THUGUTT), A., ii, 501.

**Moor water.** See under Water.

**Morphinic acid** and its nitrate and hydrochloride (WIELAND and KAPPELMEIER), A., i, 745.

**Morphine**, action of, on the alimentary canal (COHNHEIM and MODRAKOWSKI), A., ii, 516.

action of, on the heart (VAN EGMOND), A., ii, 755.

hydrochloride, double salt of, with antimony pentachloride (THOMSEN), A., i, 484.

oxide and its derivatives (FREUND and SPEYER), A., i, 77.

benzaldehyde sulphite (MAYER), A., i, 224.

and 2-amino-, and 2-nitroso-, and their salts and derivatives (WIELAND and KAPPELMEIER), A., i, 743.

detection of (DENIGÈS), A., ii, 79.

estimation of (GOTTLIEB and STEPPUHN), A., ii, 163.

in opium (DEBOURDEAUX), A., ii, 345.

**apoMorphine**, 2-amino-, and 2-nitroso-, and their hydrochlorides (WIELAND and KAPPELMEIER), A., i, 745.

**ψ-Morphine**, preparation of (DENIGÈS), A., i, 397.

**Morphine alkaloids**, preparation of formyl derivatives of (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 668.

**Morphinequinnitrole nitrate** (WIELAND and KAPPELMEIER), A., i, 745.

**Morphothebaine**, constitution of (PSCHORR and KNÖFFLER), A., i, 669.

physiological action of (HILDEBRANDT), A., ii, 517.

**Moulds**, formation of amino-acids by (EHRLICH and JACOBSEN), A., ii, 520.

production of lactic acid by (SAITO), A., ii, 321.

formation of plasma protein by (EHRLICH), A., ii, 1122.

fat-destroying action of (OHTA), A., ii, 321.

**Mucic acid**, effect of, on carbohydrate metabolism (MENDEL and ROSE), A., ii, 410; (ROSE), A., ii, 904.

cupric salts of (PICKERING), T., 176; P., 7.

**Mud** of Lake Tinaksk, Astrakhan, composition of (SOKOLOFF), A., ii, 503.

**Mulberry**, Japanese. See *Broussonetia papyrifera*.

**Mummies**, Egyptian, proteins in (ABDERHALDEN and WEIL), A., ii, 630.

**Mummy**, Egyptian, cholesterol from the skull of an (ABDERHALDEN), A., ii, 1006.

**Muscarine** from the toadstool (HONDA), A., i, 807.

**Muscle**, experiments on (BUGLIA), A., ii, 181.

creatine content of (MENDEL and ROSE), A., ii, 1007.

relation of heat evolved to the contraction of (HILL), A., ii, 215.

inhibition of chemical stimuli to, by non-electrolytes (HENDERSON), A., ii, 55.

chemical stimulation of (ROSSI), A., ii, 812.

action of drugs and salts on (LANGLEY), A., ii, 628.

influence of adrenaline on the activity of (RADWANSKA), A., ii, 312.

action of caffeine on (RANSOM), A., ii, 414.

action of nicotine on curarised (BURRIDGE), A., ii, 750.

effect of potassium salts on (MATHISON), A., ii, 753.

effect of yohimbine, veratrine, and protoveratrine on (WALLER), A., ii, 138.

changes in, after nephrectomy and ureteral ligation (JACKSON), A., ii, 409.

extractives of (v. GULEWITSCH), A., i, 815.

extractives of, distribution of nitrogen in the (v. FÜRTH and SCHWARZ), A., ii, 216.

purine metabolism in (SCAFFIDI), A., ii, 216.

plasma and pancreatic extract, action of, on sugars (LEVENE and MEYER), A., ii, 414.

bronchial, action of drugs on (JANUSCHKE and POLLAK), A., ii, 1120.

cardiac, action of lactic acid on (BURRIDGE), A., ii, 750.

frog's, action of salts on the excitability of (JOSEPH and MELTZER), A., ii, 55.

effect of potassium salts on (BURRIDGE), A., ii, 628.

surviving, influence of substances on the gaseous exchange of (THUNBERG), A., ii, 627.

isolated, action of salts on (WARD), A., ii, 906.

**Muscle**, living, reactions between chemical compounds and the proteins of (VELEY), T., 180; P., 3.  
 skeletal, action of acids on (DALE and MINES), A., ii, 628.  
 striated, action of veratrine on (LAMM), A., ii, 813.  
**Muscular rigor** and protein coagulation, the relation between (ROSSI), A., ii, 812.  
**Muscular work**, effect of, on the decomposition of injected sugar (HOHLOWEG), A., ii, 127.  
 relation of, to ketone formation (PRETI), A., ii, 628.  
 effect of, on protein metabolism (PUGLIESE), A., ii, 624.  
**Mushroom**, constituents of extract of (KUTSCHER), A., ii, 528.  
**Muthmannite** (ZAMBONINI), A., ii, 734; (GASTALDI), A., ii, 901.  
 $\alpha$ - and  $\beta$ -**Myketosine** (HONDA), A., i, 807.  
**Myrica Gale**, constituents of the oil of (PICKLES), T., 1764; P., 220.  
**Myricetin** and its hexamethyl ether (PERKIN), T., 1721; P., 225.  
**Myristic acid**, ammonium salt (FALCIOLA), A., i, 175.  
**Myristicinic acid**, amino-, cyano-, and their ethyl esters and nitro-, ethyl ester (SALWAY), T., 268.  
 nitro-, orientation of the nitro-group in (SALWAY), T., 266; P., 20.

## N.

**Naphthacenequinone**, 6-chloro-1-hydroxy-, and its sodium salt (ANILINFARBEN & EXTRACT-FABRIKEN VORM. J. R. GEIGY), A., i, 137.  
**Naphthacenequinone-4-sulphonic acid**, 6-chloro-1-hydroxy-, and its sodium salts (ANILINFARBEN & EXTRACT-FABRIKEN VORM. J. R. GEIGY), A., i, 137.  
**Naphthacinchoninic acid** (HOUBEN and DOESCHER), A., i, 61.  
**Naphthaldehyde**, 2-chloro-, and its derivatives (SACHS and BRIGL), A., i, 720.  
**2-Naphthaldehyde**, condensation of, with methylsuccinic acid (BEHREND and KLINCKHARD), A., i, 294.  
**2-Naphthaldehyde**, 4-bromo-1-hydroxy-, 4-chloro-1-hydroxy-, and their derivatives (WEIL and HEERDT), A., i, 979.  
**Naphthalene**, constitution and ultraviolet absorption spectrum of (FRY), A., i, 481.

**Naphthalene**, preparation of sulphonated derivatives of (KALLE & Co.), A., i, 627.  
**Naphthalene**, 2:4-dibromo-1:3-dihydroxy-, and tribromo-1:3-dihydroxy-, and their derivatives (MEYER and WOLFSLEBEN), A., i, 631.  
 1:4-, and 1:5-dichloro-, preparation of (BADISCHE ANILIN- & SODA-FABRIK), A., i, 850.  
 1:4-dihydroxy-, methyl ether (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), A., i, 854.  
 2:3-dihydroxy-, compound of, with *p*-benzoquinone (SIEGMUND), A., i, 654.  
 $\alpha$ -trinitro-, and  $\beta$ -tetrinitro-, additive compounds of phenols with (SUDBOROUGH and BEARD), T., 212; P., 5.  
**Naphthalene ring**, degradation of, in the animal body (KIKKOJI), A., ii, 909.  
**Naphthalene series**, ring formation in the (SACHS and BRIGL), A., i, 719; (SACHS and FORSTER), A., i, 753.  
**4- $\beta$ -Naphthaleneazo-5-hydroxy-3-methylisooxazole** (BÜLOW and HECKING), A., i, 245.  
**4- $\alpha$ - and  $\beta$ -Naphthaleneazo-5-hydroxy-3-methylpyrazole** (BÜLOW and HECKING), A., i, 405.  
**4- $\alpha$ - and  $\beta$ -Naphthaleneazo-5-hydroxy-1-phenyl-3-methylpyrazole** (BÜLOW and HECKING), A., i, 405.  
**Naphthalene-4-azo-1:2-methylenedioxybenzene**,  $\alpha$ -amino- (MAMELI), A., i, 510.  
**1-Naphthaleneazo- $\beta$ -naphthol**, 2-chloro- (CHARRIER and FERRERI), A., i, 1046.  
**1-Naphthaleneazo-2'-naphthylamine**, 2-chloro- (CHARRIER and FERRERI), A., i, 1046.  
**4- $\alpha$ - and  $\beta$ -Naphthaleneazo-3-phenylisoxazolone** (MEYER), A., i, 341.  
**Naphthalene-1-diazo-2-oxide-4-sulphonic acid**, bromo-, and its zinc salt (CHEMISCHE FABRIK VORM. SANDOZ), A., i, 1047.  
**Naphthalene-3-sulphonic acid**, 1:5-dichloro-, preparation of (BADISCHE ANILIN- & SODA-FABRIK), A., i, 434.  
**Naphthalene-6-sulphonic acid**, 1:4-dichloro- (BADISCHE ANILIN- & SODA-FABRIK), A., i, 434.  
**N- $\alpha$ , and  $\beta$ -Naphthalenesulphonylallylglycine** (ALPERN and WEIZMANN), T., 87.  
 **$\beta$ -Naphthalenesulphonyl-*dl*- $\beta$ -amino-butyric acid** (FISCHER and SCHEIBLER), A., i, 527.  
 **$\beta$ -Naphthalenesulphonylaminolaurylglycine** (HOPWOOD and WEIZMANN), T., 573.

***S-Naphthalenesulphonyl- $\alpha$ -amino- $n$ -nonoylglycine*** (HOPWOOD and WEIZMANN), T., 1579.

**Naphthalic acid**, ethyl ester (ERRERA), A., i, 465.

***peri*Naphthalideacetic acid and its silver salt** (PAULY and WALTER), A., i, 986.

**Naphthalimide**, conversion of, into naphthastyryl (PISOVSCHI), A., i, 230.

**Naphthanthraquinoneazines**, preparation of (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), A., i, 509.

**Naphthanthraquinones**, amino-, preparation of (BADISCHE ANILIN- & SODA-FABRIK), A., i, 884.

**Naphthaphenazine**, 1:3- and 2:4-di-amino- and their acetyl derivatives (KEHRMANN and RIERA Y PUNTI), A., i, 927.

**Naphthaquinone** derivatives, isomerism of (MILLER), A., i, 308, 465.

**$\alpha$ -Naphthaquinone**, vat dyes from (PUMMERER and BRASS), A., i, 654.

$\beta$ -lactone from (STAUDINGER and BEREZA), A., i, 461.

**$\beta$ -Naphthaquinoneoxime**, 4-chloro-, and its compound with 4-chloro-1-hydroxy-2-naphthoic acid (REISSERT), A., i, 368.

**Naphthaquinoneoximes** (*nitrosonaphthols*), (SLUITER), A., i, 439.

**4'-(2)- $\alpha$ -Naphthaquinonylaminobenzophenone**, 4-amino- (PUMMERER and BRASS), A., i, 655.

**4'-(2)- $\alpha$ -Naphthaquinonylaminodiphenylmethane**, 4-amino- (PUMMERER and BRASS), A., i, 655.

**Naphthastyryl**, conversion of naphthalimide into (PISOVSCHI), A., i, 230.

**$\beta$ -Naphthasulphoniumquinone**. See Dehydro- $\beta$ -naphthol sulphide.

**Naphthathioxin dioxide** (HILDITCH and SMILES), T., 415.

**Naphthenic acids** (PETROFF), A., i, 974.

**Naphthiminazoles**, isomerism of (MELDOLA), P., 98.

***peri*Naphthindandione** and its ethyl and methyl ethers (ERRERA), A., i, 466.

**Naphthoic acid**, *di*- $\beta$ -hydroxy- (FISCHER, FREUDENBERG, and HOESCH), A., i, 875.

**2-Naphthoic acid**, 4-chloro-1-hydroxy-, and its compound with 4-chloro- $\beta$ -naphthaquinoneoxime (REISSERT), A., i, 368.

**$\alpha$ -Naphthol**, chlorination of (KING), P., 266; (REISSERT), A., i, 368; (KAST), A., i, 439.

**$\alpha$ -Naphthol**, 4-chloro-2-bromo- (KING), P., 267.

**$\beta$ -Naphthol**, compound of, with *p*-amino-benzophenone (TORREY and PORTER), A., i, 340.

carbonic acid esters and diethylamino ethyl ether of (EINHORN and ROTHLAUF), A., i, 704.

**$\beta$ -Naphthol**, 4-amino-, and 1(or 3)-bromo-4-amino-, benzoyl derivatives, benzoates of (MEYER and WOLFSLEBEN), A., i, 631.

1:3-dibromo-4-amino-, acetyl derivative and its acetate (MEYER and WOLFSLEBEN), A., i, 632.

**Naphthols**, nitroso-. See Naphthaquinoneoximes.

**$\beta$ -Naphtholaldehyde**, compounds of, with *p*-aminobenzydrol and *p*-aminobenzophenone (TORREY and PORTER), A., i, 340.

**$\alpha$ -Naphthol-2-carboxylic acid**, 4-chloro- (WEIL and HEERDT), A., i, 979.

**Naphtholcarboxylic acids**, action of sodium amalgam on (WEIL), A., i, 978.

**2-Naphthol-3:6-disulphonic acid**, 1-nitroso-, sodium salt (MAX), P., 141.

**$\alpha$ -Naphthol-5-sulphonic acid**, 6-amino- (KALLE & Co.), A., i, 630.

**2-Naphthoylbenzoic acid**, 2'- and 4(5)-amino-, and 2'- and 4(5)-chloro- (BADISCHE ANILIN- & SODA-FABRIK), A., i, 885.

**Naphthoylboric acid**, *tri*- $\alpha$ -, and  $\beta$ -hydroxy- (COHN), A., i, 641.

**4-Naphthoyloxybenzoic acid**,  $\alpha$ -hydroxy- (FISCHER, FREUDENBERG, and HOESCH), A., i, 875.

**$\alpha$ -Naphthylacetyl chloride** (BADISCHE ANILIN- & SODA-FABRIK), A., i, 464.

**$\beta$ -1-Naphthylacrylic acid**, 2-chloro-, and its salts and derivatives (SACHS and BRIGL), A., i, 720.

**$\beta$ -1- and 2-Naphthylacrylic acids**,  $\alpha$ -amino-, benzoyl derivatives, and their lactimides (KIKKOJI), A., ii, 909.

**$\beta$ -1- and 2-Naphthylalanine** and their derivatives (KIKKOJI), A., ii, 910.

**$\alpha$ - and  $\beta$ -Naphthylamine**, salts of (HILDITCH), T., 236.

preparation of derivatives of (LE SUEUR), T., 827; P., 104.

**1-Naphthylaminoanthraquinone-2-carboxyl chloride** (BADISCHE ANILIN- & SODA-FABRIK), A., i, 980.

**1-Naphthylamino-1-anthraquinone-2-carboxylic acid** (BADISCHE ANILIN- & SODA-FABRIK), A., i, 980.

**$\alpha$ -1-Naphthylaminopalmitic acid** (LE SUEUR), T., 832.

**$\alpha$ -2-Naphthylaminopalmitic acid** (LE SUEUR), T., 829.

**$\alpha$ -1-Naphthylaminostearic acid** (LE SUEUR), T., 831; P., 104.

**$\alpha$ -2-Naphthylaminostearic acid** (LE SUEUR), T., 828.

**$\alpha$ - and  $\beta$ -Naphthylammonium osmichloride** (GUTBIER and WALBINGER), A., i, 191.

**platinibromide** (GUTBIER, BAURIEDEL, and OBERMAIER), A., i, 33.

**$\beta$ -Naphthylisobutylene** (BEHREND and KLINCKHARD), A., i, 294.

**$\beta$ -Naphthylbutyrolactone** (BEHREND, LUDEWIG, and KLINCKHARD), A., i, 289.

**$\beta$ -Naphthylisocrotonic acid** (BEHREND, LUDEWIG, and KLINCKHARD), A., i, 289.

**1-Naphthyl diazonium chloride**, 2-chloro- (CHARRIER and FERRERI), A., i, 1046.

**$\alpha$ -Naphthylidiguanide** and its salts (COHN), A., i, 929.

**$\alpha$ -Naphthylhydrohydrastinine** and its salts (FREUND and LEDERER), A., i, 907.

**Naphthylhydroxylamine**,  $\alpha$ -nitroso-, metallic salts of (BAUDISCH), A., i, 125.

**Naphthylideneamines** (SENIER and CLARKE), T., 2081; P., 260.

**$\alpha$ -Naphthylidene-*o*-, *m*-, and *p*-amino-benzoic acid**, 2-hydroxy- (SENIER and CLARKE), T., 2083.

**$\alpha$ -Naphthylidene-*o*-, *m*-, and *p*-amino-phenol**, 2-hydroxy- (SENIER and CLARKE), T., 2082.

**$\alpha$ -Naphthylidene-*o*-, *m*-, and *p*-anisidine**, 2-hydroxy- (SENIER and CLARKE), T., 2083.

**$\alpha$ -Naphthylidene-*o*-, *m*-, and *p*-bromo-aniline**, 2-hydroxy- (SENIER and CLARKE), T., 2082.

**$\alpha$ -Naphthylidene-*o*-, *m*-, and *p*-chloro-aniline**, 2-hydroxy- (SENIER and CLARKE), T., 2081.

**$\alpha$ -Naphthylidene- $\psi$ -cumidine**, 2-hydroxy- (SENIER and CLARKE), T., 2084.

**$\alpha$ -Naphthylidene-*m*-nitroaniline**, 2-hydroxy- (SENIER and CLARKE), T., 2082.

**$\alpha$ -Naphthylidene-*o*-4-, *m*-4-, and *p*-xylyidine**, 2-hydroxy- (SENIER and CLARKE), T., 2084.

**$\beta$ -Naphthylitamic acid** (BEHREND, LUDEWIG, and KLINCKHARD), A., i, 288.

**$\alpha$ -Naphthyl ketones**, preparation of, free from the  $\beta$ -isomerides (CAILLE), A., i, 792.

**$\alpha$ (?) $-Naphthyl-4$ -methoxyphenylacetic acid**, 2-hydroxy- (BISTRZYCKI, PAULUS, and PERRIN), A., i, 868.

**Naphthyl- $\beta$ -methylisocrotonic acid** (BEHREND and KLINCKHARD), A., i, 294.

**$\gamma$ ( $\alpha$ - and  $\beta$ )-Naphthyl- $\gamma$ -methylitaconic acid** (STOBBE and LENZNER), A., i, 379.

**$\beta$ -Naphthyl methyl ketone**, 1-hydroxy-(2-acetyl- $\alpha$ -naphthol) (TORREY and CARDARELLI), A., i, 67.

**Naphthylmethylparaconic acids**, isomeric (BEHREND and KLINCKHARD), A., i, 294.

**$\beta$ -Naphthylparaconic acid** (BEHREND, LUDEWIG, and KLINCKHARD), A., i, 288.

**$\beta$ -Naphthyl-3-methyl-5-pyrazolone-7'-sulphonic acid**, 5'-hydroxy-, and its nitroso-derivative (AKTIEN-GESELLSCHAFT FÜR ANILIN-FABRIKATION), A., i, 687.

**$\alpha$ -Naphthyoxyamic acid**, 3-hydroxy-, and its ethyl ester and amide (MEYER and WOLFSLEBEN), A., i, 631.

**$\alpha$ -1-Naphthylpentan- $\gamma$ -one**, 2-chloro- (SACHS and BRIGL), A., i, 720.

**$\alpha$ -1-Naphthyl- $\Delta$ <sup>a</sup>-penten- $\gamma$ -one**, 2-chloro-, and its semicarbazone (SACHS and BRIGL), A., i, 720.

**$\alpha$ -1-Naphthylpentan- $\gamma$ -one- $\alpha$ -ol, 2-chloro- (SACHS and BRIGL), A., i, 720.**

***N*- $\alpha$ -Naphthylphthalamic acid**, 3-hydroxy- (MEYER and WOLFSLEBEN), A., i, 631.

**$\beta$ -Naphthylpyruvic acid** (KIKKOJI), A., ii, 910.

**1:8-Naphthyridine**, synthesis of derivatives of, from  $\alpha$ -aminopyridine (PALAZZO and TAMBURINI), A., i, 327.

**Narcine**, constitution of (RABE and McMILLAN), A., i, 77.

**Narcissine** and its picrate (TUTIN), T., 1244; P., 149.

**Narcotics**, preparation of (BOEHRINGER and SÖHNE), A., i, 102.

and local anaesthetics (GROS and HARTUNG), A., ii, 136.

action of, on oxidation in the liver (JOANNOVICS and PICK), A., ii, 628.

**Narcotine**, constitution of (RABE and McMILLAN), A., i, 77.

benzaldehyde sulphite and anhydro-sulphite (MAYER), A., i, 224.

***d*- and *L*-Narcotine salts** of  $\alpha$ - and  $\beta$ -bromo-camphorsulphonic acids (PERKIN and ROBINSON), T., 788.

**Narin** (BROOKS), A., i, 553.

**Natramblygonite** (SCHALLER), A., ii, 121.

**Natrolite**, metameric (THUGUTT), A., ii, 736.

**Neocoolemanite** from California (EAKLE), A., ii, 901.

**Neodymium**, atomic weight of (BAXTER and CHAPIN), A., ii, 285.

**Neodymium** chloride, ultra-violet absorption spectrum of (BAXTER and WOODWARD), A., ii, 351.

ammonium molybdate (BARBIERI), A., ii, 291.

rubidium nitrate (JANTSCH and WIGDOROW), A., ii, 115.

**Neon**, spectrum of (WATSON), A., ii, 559.

luminiscence of tubes of (CLAUDE), A., ii, 602, 1087.

critical temperature of (ONNES and CROMMELIN), A., ii, 854.

diffusion of, through hot quartz (RICHARDSON and DITTO), A., ii, 1087.

**Neopine**. See Codeine, hydroxy-.

**Neosine** and its salts (BERLIN), A., i, 771.

**Nephelite**, composition of (SCHALLER), A., ii, 992.

solid solution in (FOOTE and BRADLEY), A., ii, 122.

**Nephrite** from the Harz (UHLIG), A., ii, 46.

**Nephritis**, colloidal-chemical changes in (FISCHER), A., ii, 417.

composition of human milk in (ENGEL and MURSCHHAUSER), A., ii, 813.

in rabbits (HARVEY), A., ii, 1013.

*Nephrolepis hirsutula*, sugar in the nodules of (LIEBER), A., ii, 921.

**Nerol**, degradation of, and its constitution (BLUMANN and ZEITSCHEL), A., i, 892.

**Nerves**, physical, chemical and electrical properties of (ALCOCK and LYNCH), A., ii, 413; (ELLISON), A., ii, 905.

effect of local anaesthetics on (SYMES and VELEY), A., ii, 508.

action of aconitine on (HARTUNG), A., ii, 1016.

effect of yohimbine, veratrine, protoveratrine on (WALLER), A., ii, 138.

removal of fat in the degeneration of (MACDONALD), A., ii, 1006.

excitability of, in oxalic acid poisoning (CHIARI and FRÖHLICH), A., ii, 1018.

polared, effect of ions transported by the current, on the conductivity of (SCHWARTZ), A., ii, 306.

**Nervous system**, chemical composition of the (BARBIERI), A., ii, 413.

staining of the tissues of the (SMITH and MAIR), A., ii, 215.

vegetative, changes in the excitability of the, by removal of calcium (CHIARI and FRÖHLICH), A., ii, 306.

**Nesquehonite**, artificial production of (CESARO), A., ii, 209.

**Neuro-muscular** mechanisms, replacement of the alkaline-earth metals in (MINES), A., ii, 413.

**Nickel**, electrolytic deposition of (ENGEMANN), A., ii, 1094.

anodic polarisation of, in presence of chromous salts (RUSSO), A., ii, 1056.

anode. See under Electrochemistry.

passive, influence of the magnetic field on (BYERS and MORGAN), A., ii, 1057.

reactions in the presence of (NEOGI and ADHICARY), A., ii, 107.

hydrogenation by, in presence of sodium hypophosphite (BRETEAU), A., i, 533.

catalysis with finely divided (VAN BERESTEYN), A., i, 761.

sodium chloride and mercury, reactions in the system (PETERS), A., ii, 1095.

solubility of hydrogen in (SIEVERTS), A., ii, 895.

complex compounds of, with glyoximes (TSCHUGAEFF), A., i, 263.

**Nickel alloys** with molybdenum (BAAR), A., ii, 611.

with zinc (VIGOUROUX and BOURBON), A., ii, 1095.

**Nickel** salts, absorption of light by (HOUSTOUN), A., ii, 785; (HOUSTOUN and ANDERSON), A., ii, 786.

magnetisation of (WEISS and FOËX), A., ii, 183.

**Nickel** carbonyl, magnetic susceptibility of (OXLEY), A., ii, 251.

tetra-aquo-fluoride (COSTACHESCU), A., ii, 730.

hydroxide, use of, in tannin estimation (SINGH), A., ii, 946.

peroxide, behaviour of, in salt formation (TUBANDT and RIEGEL), A., ii, 987.

**Nickel**, distinction between, and cobalt (WEIL), A., ii, 158.

and cobalt, borax bead tests for (CURTMAN and ROTHBERG), A., ii, 336.

spongy, precipitation of (LOW), A., ii, 1139.

precipitation of, as carbonate (SCHIRM), A., ii, 1138.

estimation of, electrolytically (BENNER and Ross), A., ii, 443.

estimation of, and cobalt gravimetrically (DEDE), A., ii, 1034.

copper and cobalt, estimation of (PEDERSON), A., ii, 771.

estimation of, in German silver (IBBOTSON), A., ii, 1139.

rapid estimation of, in steel (RAULIN), A., ii, 1034.

**Nickel steel** (MCWILLIAM and BARNES), A., ii, 1092.  
 cementation of (GIOLITTI and CARNEVALI), A., ii, 609.  
 magnetic properties of (COLVER-GLAUERT and HILPERT), A., ii, 1057.  
 anomalous expansion of (GUILLAUME), A., ii, 185.

**Nicotine**, action of, on curarised muscle (BURRIDGE), A., ii, 750.  
 hydrochloride, double salt of, with antimony pentachloride (THOMSEN), A., i, 484.

**Nicotine**, estimation of (BERTRAND and JAVILLIER), A., ii, 827.  
 estimation of, in tobacco (ESSNER; TÓTH), A., ii, 943.  
 estimation of, in tobacco-juice (SCHRÖDER), A., ii, 163, 552; (KISSLING), A., ii, 344, 345; (ULEX), A., ii, 344; (TÓTH: LEISTER), A., ii, 345; (v. DEGRAZIA), A., ii, 671; (MELLER), A., ii, 672; (KOENIG), A., ii, 672, 1143.  
 estimation of, in presence of pyridine bases (SURRE), A., ii, 778.

**Nicotinic acid**, betaine of (KIRPAL), A., i, 157.

*iso***Nicotinic acid**, betaine of (KIRPAL), A., i, 156.

**Niton**. See Radium emanation.

**Nitranilic acid**. See *p*-Benzoinone. 3:6-dinitro-2:5-dihydroxy-.

**Nitrates**. See under Nitrogen.

**Nitroatocholine perchlorate** (HOFMANN and HÖBOLD), A., i, 608.

**Nitre**, assay of sweet spirits of (HERTING; DIETZE), A., ii, 662.

**Nitric acid**. See under Nitrogen.

**Nitrification** by ultra-violet light (BERTHELOT and GAUDECHON), A., ii, 240.  
 action of gypsum on (DEZANI), A., ii, 1019.

**Nitriles**, synthesis of (GRIGNARD), A., i, 292.  
 action of, on cyanoguanidine (OSTROGOVICH), A., ii, 507.  
 action of hydrogen chloride and methyl alcohol on (STEINKOPF and MALINOWSKI), A., i, 946.  
 toxicity of (DESGREZ), A., ii, 1119.

**Nitrolo-trimethylnitroaminomethane** (FRANCHIMONT), A., i, 19.

**Nitroamines**, aromatic, action of concentrated sulphuric acid on (REVERDIN), A., i, 123.  
 and allied substances, transformation of, and its relation to substitution in benzene derivatives (BRITISH ASSOCIATION REPORTS), A., i, 713.

**Nitro-compounds**, ultra-violet absorption spectra of (ZELINSKY and ROSANOFF), A., ii, 1044.  
 freezing-point curves of mixtures of, with fluorene (KREMANN, DISCHEN-DORFER, FRANKOVIC, HAUSER, HÖNEL, SCHOULZ, and VALENTA), A., ii, 871.  
 condensation of cotarnine with (HOPE and ROBINSON), T., 2114; P., 265.  
 aliphatic (STEINKOPF and SUPAN), A., i, 4, 946; (STEINKOPF and DAEGE), A., i, 280; (STEINKOPF and JÜRGENS), A., i, 530.  
 primary aliphatic, preparation of (v. BRAUN and SOBECKI), A., i, 830.  
 aromatic (CIUSA), A., i, 931.  
 colorations produced by the interaction of amino-compounds and (WALTER), A., i, 363.

**Nitrogen** and sulphur, relative atomic weights of (BURT and USHER), A., ii, 389.  
 pure, industrial preparation of (CLAUDE), A., ii, 1084.  
 spectrum of (FOWLER and STRUTT), A., ii, 678.  
 a chemically active form of, produced by the electric discharge (STRUTT), A., ii, 482.  
 flame from the electric arc in (STRUTT), A., ii, 1056.  
 quinquevalent, stereochemistry of (SCHOLTZ), A., i, 326.  
 ratio of, to argon in natural gaseous mixtures (MOUREU and LEPAPE), A., ii, 602.  
 and carbon, gaseous compounds of (LIDOFF), A., i, 429.  
 and hydrogen, compounds of, with lithium (DAFERT and MIKLAUZ), A., ii, 393.  
 action of, on lithium carbide (TUCKER and MOODY), A., ii, 883.  
 non-combination of, with hydrogen in the presence of nickel (NEOGI and ADHICĀRY), A., ii, 107.  
 and oxygen, analogies between derivatives of (ANGELI), A., i, 620.  
 catalytic action of potassium carbonate on the absorption of, by calcium carbide (POLLACCI), A., i, 358.  
 action of, on wines (MALVEZIN), A., ii, 916.  
 compounds, assimilation of (BAUDISCH), A., ii, 523.  
 assimilation of, by leaves (OTTO and KOOPER), A., ii, 524.  
 atmospheric, assimilation of, by higher plants (MAMELI and POLLACCI), A., ii, 759; (HUTCHINSON and MILLER), A., ii, 920.

**Nitrogen**, atmospheric, assimilation of, by thermophilic bacteria (PRINGSHEIM), A., ii, 916.

fixation of, by fungi (LIPMAN), A., ii, 1019.

metabolism. See under Metabolism.

nutrition of *Leguminosæ* (RITTER), A., ii, 428.

organic, in soils, chemical nature of (JODIDI), A., ii, 821.

availability of (LIPMAN, BROWN, and OWEN), A., ii, 924.

content of rain-water in Tonquin (AUFRAY), A., ii, 224.

**Nitrogen** hydrides, behaviour of, with liquid ammonia (BROWNE and WELSH), A., ii, 1084 ; (BROWNE and HOULEHAN), A., ii, 1085.

oxides, formation of, during denitrification (SUZUKI), A., ii, 916 ; (LEBEDEFF), A., ii, 917.

reduction of, in the presence of nickel (NEOGI and ADHICARY), A., ii, 107.

**Nitrogen monoxide** (*nitrous oxide*), preparation of (QUARTAROLI), A., ii, 1085.

the system nitric acid, nitrous acid and, equilibrium in (LEWIS and EDGAR), A., ii, 264.

analysis of (SMITH and LEMAN), A., ii, 766.

**Nitrogen dioxide** (*nitric oxide*), preparation and estimation of, and its behaviour to water (MOSER), A., ii, 598.

in flames (REIS), A., ii, 483.

fusibility curve of, and methyl ether (BAUME and GERMANN), A., i, 830.

sulphide, crystalline form of (SMITH), A., ii, 1086.

**Nitric acid**, formation of, in the arc discharge (MAKOWETZKY), A., ii, 463.

molecular weight and constitution of (ODDO and ANELLI), A., ii, 717.

the system, nitrous acid and nitric oxide, equilibrium in (LEWIS and EDGAR), A., ii, 264.

action of nascent hydrogen on (BANERJEE and BANERJEE), P., 326.

decomposition of, by light (REYNOLDS and TAYLOR), P., 306.

oxidation of organic acids by, in sunlight (BENRATH), A., ii, 835.

influence of metallic nitrates on the solution of copper in (RENNIE and COOKE), T., 1035 ; P., 42.

influence of ferric salts and of manganese nitrate on the rate of solution of mercury in (RAY), T., 1012 ; P., 4.

**Nitrogen** :—

Nitric acid, detection of (KLEIN), A., ii, 341.

detection and estimation of, in milk (TILLMANS), A., ii, 151.

estimation of (ROMYN), A., ii, 767.

estimation of, in wines (TILLMANS), A., ii, 930.

**Nitrates**, production of, in arable soils (KOCH), A., ii, 922.

reduction of, by bacteria (PELZ), A., ii, 139.

reduction of, by perhydrase (BACH), A., i, 759.

reaction between anhydrous formic acid and (QUARTAROLI) A., ii, 1079.

fusion of, with sodium paratungstate (GOOCH and KUZIRIAN), A., ii, 657.

detection of, by the diphenylamine test (WITHERS and RAY), A., ii, 656 ; (CARON), A., ii, 767.

detection of, in water (DENIGÈS), A., ii, 655.

detection and estimation of, in water (TILLMANS and SUTTHOFF), A., ii, 767.

estimation of (CARON and RAQUET), A., ii, 69 ; (MARQUEYROL and FLORENTIN), A., ii, 437 ; (QUARTAROLI), A., ii, 1085 ; (SEYDEL and WICHERS), A., ii, 1132.

estimation of, in gun-cotton (PELLET), A., ii, 930.

estimation of, in milk (TILLMANS and SPLITTERBER), A., ii, 1132.

estimation of, gasometrically, sources of error in the (RUFF and GERSTEN), A., ii, 930.

estimation of, in water, by the phenolsulphonic acid method (CHAMOT, PRATT, and REDFIELD), A., ii, 331.

estimation of, in vegetable matter (KROG and SEBELIEN), A., ii, 227.

**Nitrous acid**, formation of, in the living cell (MAZÉ), A., ii, 643, 918.

the system, nitric acid, and nitrous oxide, equilibrium in (LEWIS and EDGAR), A., ii, 264.

detection of (VAUBEL), A., i, 1049.

**Nitrites**, detection of (DANÉ), A., ii, 534.

detection of, by the diphenylamine test (WITHERS and RAY), A., ii, 656.

detection of, in water (DENIGÈS), A., ii, 655.

detection and estimation of, in water (TILLMANS and SUTTHOFF), A., ii, 767.

**Nitrogen:**—

Nitrates, estimation of (RUPP and LEHMANN), A., ii, 535.  
 estimation of, in sewage (CLARKE), A., ii, 928.  
 estimation of, in water (KASTLE and ELVOVE), A., ii, 437; (BLANC), A., ii, 930; (SÜPFLE), A., ii, 940.  
 estimation of, gasometrically, sources of error in the (RUFF and GERSTEN), A., ii, 930.  
 estimation of, by means of the action of hydrazine sulphate on (DEY and SEN), A., ii, 822.

**Nitrogen**, detection of, in organic compounds (HALENKE and KLING), A., ii, 1131.

rapid estimation of (CLAASSEN), A., ii, 1027.

estimation of, new distillation apparatus for the (MÜLLER), A., ii, 68.

estimation of, by Kjeldahl's method (KOEFOED), A., ii, 67; (VAN RYN), A., ii, 226; (EDWARDS and CHADS), A., ii, 437; (ANDERSEN: V. LIEBERMANN), A., ii, 655; (KRIEGER), A., ii, 1027.

estimation of, in the extractives of muscle (v. FÜRTH and SCHWARZ), A., ii, 216.

estimation of, in aliphatic amino-compounds (VAN SLYKE), A., ii, 779.

estimation of, in organic compounds (FRANKLAND), T., 1783; P., 207, 309; (FABINYI), A., ii, 534.

estimation of the amidic, in proteins (DENIS), A., ii, 163.

estimation of, in soils (MITSCHERLICH and MERRES), A., ii, 68.

estimation of, in rain-water from Groningen (HUDIG and WELT), A., ii, 1128.

**Nitrogen-carbon** linking (EMDE and RUNNE), A., i, 714, 718.

**Nitrogen compounds**, stereochemistry of (FREUND and KUPFER), A., i, 911.

relation between reactivity and chemical constitution of (CLARKE), T., 1927; P., 243.

**Nitrogenous** substances, degradation of by yeast (SCHWARZ), A., ii, 640.

**Nitro-group**, orientation of, in nitro-myristicinic acid (SALWAY), T., 266; P., 20.

**Nitrohydrazo-compounds**, alkaline condensations of (GREEN and BEARDER), T., 1960; P., 228.

"Nitrolime," analysis of (KAPPEN), A., ii, 933.

**Nitrometer**, flasks for use with the (MICHEL), A., ii, 68.

"Nitron method," estimation of nitrate in Chili saltpetre by the (RADLBERGER), A., ii, 69.

**Nitrosates**, action of hydroxylamine on (CUSMANO), A., i, 186.

**Nitrosulphuric acid**. See Nitrosyl-sulphuric acid, hydroxy-.

**Nitroso-chlorides**, action of hydroxylamine on (CUSMANO), A., i, 186. cyclic, action of, with semicarbazide (RUPE and ALtenBURG), A., i, 72.

**Nitroso-compounds**, metallic (KOHL-SCHÜTTER and SAZANOFF), A., ii, 730.

action of diphenylketen on (STAUDINGER and JELAGIN), A., i, 215.

**Nitrosyl** chloride, formation of, at low temperatures, and its equilibrium with chlorine (BOUBNOFF and GUYE), A., ii, 599.

**Nitrosylous sulphuric acid** (WENTZKI), A., ii, 273.

**Nitrosylsulphuric acid**, hydroxy- (SCAN-DOLA), A., ii, 273.

**Nitrous acid**. See under Nitrogen.

**Nomenclature** of carbohydrates (VOTOREK), A., i, 179.

of spirans (RADULESCU), A., i, 497.

**Nonane**,  $\gamma$ -halogen derivatives of (PICKARD and KENYON), T., 71.

**Non-metals**, thermal conductivity of (EUCKEN), A., ii, 185.

*n*-**Nonoyl** chloride,  $\alpha$ -bromo- (HOPWOOD and WEIZMANN), T., 1577; P., 214.

*n*-**Nonoylalanine**,  $\alpha$ -amino-, and  $\alpha$ -bromo- (HOPWOOD and WEIZMANN), T., 1580.

*n*-**Nonylasparagine**,  $\alpha$ -amino-, and  $\alpha$ -bromo- (HOPWOOD and WEIZMANN), T., 1588.

*n*-**Nonylaspartic acid**,  $\alpha$ -amino-, and  $\alpha$ -bromo- (HOPWOOD and WEIZMANN), T., 1584.

*n*-**Nonoylglycine**,  $\alpha$ -amino-, and  $\alpha$ -bromo- (HOPWOOD and WEIZMANN), T., 1578; P., 214.

*n*-**Nonoyl-leucine**,  $\alpha$ -amino-, and  $\alpha$ -bromo- (HOPWOOD and WEIZMANN), T., 1582.

*n*-**Nonoylvaline**,  $\alpha$ -amino-, and  $\alpha$ -bromo- (HOPWOOD and WEIZMANN), T., 1581.

**Nonyl bromide** (v. BRAUN and SOBECKI), A., i, 598.

**Nonylamine** and its derivatives (v. BRAUN and SOBECKI), A., i, 597.

*n*-**Nonylglycine**,  $\alpha$ -bromo- $\alpha$ -amino-, iso-hexyl derivative (HOPWOOD and WEIZMANN), T., 1579.

**Norbixin** and its ethyl ethers and metallic derivatives (VAN HASSELT), A., i, 551.

**North American clapper snake**, crotalotoxin from (FAUST), A., ii, 317.

**Nortropan**, cyano- (v. BRAUN), A., i, 564.

**s-Nortropylphenylguanidine** and its salts (v. BRAUN), A., i, 564.

**Nuclease**, estimation of, in various organs (JUSCHTSCHENKO), A., ii, 412. estimation of the activity of, by the optical method (PIGHINI), A., ii, 236.

**Nucleases** (LEVENE and MEDIGRECEANU), A., i, 410, 698; (JONES), A., i, 410.

**Nucleic acid**, digestion and absorption of (LONDON and SCHITTENHELM), A., ii, 52. from yeast (LEVENE and JACOBS), A., i, 510.

**Nucleic acids**, action of gastro-intestinal juices on (LEVENE and MEDIGRECEANU), A., ii, 744; (LONDON, SCHITTENHELM, and WIENER), A., ii, 745. cleavage of, by enzymes (AMBERG and JONES), A., i, 824. action of, on fermentation in the animal body (TSCHERNORUZKI), A., ii, 1119. in the liver (MASING), A., ii, 1111.

**Nuclein** metabolism. See Metabolism.

**Nucleins**, cleavage of, by enzymes (AMBERG and JONES), A., i, 823.

**Nucleinases** (LEVENE and MEDIGRECEANU), A., i, 698.

**Nucleoprotein**, isoelectric point of trypsin and (MICHAELIS and DAVIDSOHN), A., i, 343.

**Nucleoproteins**, rôle of, in plants (ZALESKI), A., ii, 819.

**Nucleosidases** (LEVENE and MEDIGRECEANU), A., i, 698.

**Nucleotidases** (LEVENE and MEDIGRECEANU), A., i, 698.

**Nutrition**, studies in (MENDEL and FINE), A., ii, 1109.

## O.

**Obituary notices** :—

Richard Abegg, T., 599.

Friedrich Konrad Beilstein, T., 1646.

James Campbell Brown, T., 1457.

Michael Carteighe, T., 602.

Emil Erlenmeyer, T., 1649.

Rudolph Fittig, T., 1651.

Oscar Guttmann, T., 604.

Hans Heinrich Landolt, T., 1653.

Nikolai Alexandrovitsch Menschutkin, T., 1660.

Sir Walter Palmer, Bart., T., 1667.

Charles Hanson Greville Williams, T., 606.

C. ii.

**Ochrein** (MARINO-ZUCO and FOA), A., i, 1049.

**Ochres**, action of heat on (BOUCHONNET), A., ii, 495.

**n-Octaldehyde**, sodium hydrogen sulphite compound of (PICKARD and KENYON), T., 56.

**Octan- $\gamma$ -dione- $\alpha$ -ol** (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 102.

**Octane**, halogen derivatives of (PICKARD and KENYON), T., 69.

**$\Delta^{\alpha}$ -Octen- $\gamma$ -dione**, and its semicarbazone (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 114.

**Octoic acid**, ammonium salt (FALCIOLA), A., i, 175.

**Octylene oxide**, compound of, with acetyl chloride (PRIESCHAEFF), A., i, 255.

**n-Octylisopropylcarbinol**, rotation of (PICKARD and KENYON), P. 324.

**Eceticus platenensis**, composition of the material spun by (ABDERHALDEN and LANDAU), A., ii, 509.

**$\mathcal{O}$ enanthe crocata**, chemical examination of (TUTIN), A., ii, 921.

**Oil**, influence of the acidity of aqueous solutions on the system water and (REINDERS), A., ii, 373. stability of emulsions of, with water (HATSCHEK), A., ii, 1068.

cod-liver, fatty acids in (HEIDUSCHKA and RHEINBERGER), A., i, 766.

**Oils**, decomposition of (HERTKORN), A., ii, 138. essential and ethereal. See Oils, vegetable. mineral, from potash-salt deposits (GRAEFE), A., ii, 119.

vegetable, constituents of (BACON), A., i, 73; (SEMMLER and MAYER), A., i, 73, 733; (LALOUE), A., i, 138; (SEMMLER and ZAAR), A., i, 218, 313, 388; (SEMMLER and SCHLOSSBERGER), A., i, 475, 1002; (SCHIMMEL & Co.), A., i, 475, 893; (ROURE-BERTRAND FILS, DUPONT and LABAUNE), A., i, 895. and terpenes (WALLACH), A., i, 310, 312, 469, 473, 891.

refractive constants of (KLIMONT), A., ii, 234.

toxicity of, towards higher vegetation (COUPIN), A., ii, 326.

and fats, estimation of, the acidity of (LOEBELL), A., ii, 342.

estimation of lecithin in (FRESENIUS and GRÜNHUT), A., ii, 343.

estimation of phosphorus in (FREY), A., ii, 535.

**Oleander bark**, Algerian, constituents of (LEULIER), A., ii, 922.

**Oleic acid**, solubility of metals in (GATES), A., ii, 394.

ammonium salt and separation of, from palmitic and stearic acids (FALCIOLA), A., i, 5, 174.

behaviour of red blood-corpuscles in poisoning by (SCHMINCKE and FLURY), A., ii, 125.

inhibition of the irritating action of, by cholesterol (LAMB), A., ii, 52.

**Oleoelaidic acid**, preparation of (GAWALOWSKI), A., i, 416.

**Oleone** and its oxime (EASTERFIELD and TAYLOR), T., 2303; P., 279.

**Olivetoric acid**, metallic salts of (HESSE), A., i, 209.

**Olivetorol** (HESSE), A., i, 209.

**Opal**, effect of pressure on the change of, into quartz (SPEZIA), A., ii, 497.

**Open-chain compounds**, absorption spectra of (CRYMBLE, STEWART, WRIGHT, and REA), T., 1262; P., 153.

**Opionic acid** aldoxime, *N*-benzoyl derivative of, and its cinchonine salt (SCHEIBER and FLEISCHMANN), A., i, 382.

**Opium**, constituents of (VAN ITALLIE and KERBOSCH), A., i, 76.

a new alkaloid from (DOBBIE and LAUDER), T., 34.

estimation of codeine in (ANDREWS), A., ii, 1144.

estimation of morphine in (DEBOUR-DEAUX), A., ii, 345.

**Opium alkaloids** (VAN ITALLIE and KERBOSCH), A., i, 76.

action of, on the alimentary canal (COHNHEIM and MODRAKOWSKI), A., ii, 516.

**Optical activity**. See under Photo-chemistry.

**Organic compounds**, photolysis of, by ultra-violet light (BERTHELOT and GAUDECHON), A., ii, 86, 242, 835.

phosphorescence of, at low temperatures (DE KOWALSKI and DE DZIERZBICKI), A., ii, 3.

influence of three- and four-membered carbon rings on the refractive and dispersive power of (ÖSTLING), P., 315.

electrical double refraction of (LEISER), A., ii, 563.

dielectric constants of (DOBROSERD-OFF), A., ii, 458.

electrical effects accompanying the decomposition of (POTTER), A., ii, 913.

temperature-coefficients of the molecular surface energy of (WALDEN), A., ii, 97.

**Organic compounds** of physiological importance, heat of combustion of (EMERY and BENEDICT), A., ii, 857.

measurement of the influence of substitution in, by polarity (DERICK), A., ii, 713.

rotatory power of, in presence of lead salts (PELLET), A., ii, 775.

solubility equilibria between iodine and (OLIVARI), A., ii, 592.

amalgams of, (McCoy and MOORE), A., i, 270.

reactivity of the halogens in (SENTER), T., 95; (SENTER and PORTER), T., 1049; P., 119.

additive, with metallic halides (MEN-SCHUTKIN), A., i, 992.

reduction and oxidation of, by catalysis (SABATIER), A., i, 702.

oxidation of, by potassium permanaganate (HETPER), A., ii, 339.

spontaneously oxidisable with phosphorescence (DELÉPINE), A., i, 768.

dihalogen, action of Grignard reagents on (v. BRAUN and SOBECKI), A., i, 701.

trichlorinated, action of alkalis on (BRESSANIN and SEGRE), A., i, 830.

iodo-, relative activities of (SEGALLER), P., 283.

unsaturated, catalytic reduction of (FOKIN), A., i, 1.

toxicity of (STADLER), A., ii, 223.

in soil (SCHREINER and SHOREY), A., ii, 147.

colour reactions of groups of (AGULHON), A., ii, 1140.

detection of nitrogen in (HALENKE and KLING), A., ii, 1131.

detection and estimation of arsenic in (BRESSANIN), A., ii, 1133.

estimation of arsenic in (LOCKEMANN), A., ii, 1028.

estimation of carbon in (TANGL and v. KERESZTY), A., ii, 538.

estimation of carbon and nitrogen in (FRANKLAND), T., 1783; P., 207, 309.

estimation of the elements in (AUVZES), A., ii, 928.

estimation of halogens in (WALKER and MACRAE), A., ii, 434; (EMDE), A., ii, 532; (WARUNIS), A., ii, 927.

estimation of active hydrogen in (ZEREWITINOFF), A., i, 101; (ODDO), A., ii, 826.

estimation of small quantities of iron in (JAHN), A., ii, 1138.

estimation of nitrogen in (FABINYI), A., ii, 534.

estimation of sulphur in (WARUNIS), A., ii, 67.

**Organic matter**, calcination of, without loss of phosphorus (FLEURENT and LEVI), A., ii, 656.

destruction of, by bromine (MAGNIN), A., ii, 1035.

estimation of, in water (NOLL), A., ii, 925.

estimation of, in water from sulphur springs (DITTRICH), A., ii, 1035.

**Organic radicles**, nature of (HINSBERG), A., ii, 873.

**Organism**, action of chlorinated aliphatic hydrocarbons on the (LEHMANN, BEHR, QUADFLIES, FRANZ, HERRMANN, KNOBLAUCH, GUNDERMANN, and WÜRTHE), A., ii, 634.

behaviour of fatty iodo-acids in the (PONZIO), A., ii, 1015.

value of amino-acids in the (ABDERHALDEN, FURNO, GOEBEL, and STRÜBEL), A., ii, 1002.

electrometric method of study of the reaction of liquids of the (QUAGLIARIELLO), A., ii, 962.

animal, amount of alcohol excreted by the (VÖLTZ and BAUDREXEL), A., ii, 218.

adaptation of the capacity of the, to over-feeding (GRAFE and GRAHAM), A., ii, 811.

elimination of colouring matters by the (SISLEY and PORCHER), A., ii, 515.

ratio of fatty acids to unsaponifiable substances in the (COSTANTINO), A., ii, 627.

dog's, value of amino-acids in the (ABDERHALDEN and MARKWALDER), A., ii, 634.

*Origanum hirtum*, constituents of the oil of (PICKLES), P., 284.

**dl-Ornithine** monopicrate, crystallography of (REINER), A., i, 815.

**Orthite** rich in scandium, from Finland (MEYER), A., ii, 406.

**Orthoclase** and microcline, distinction between (VERNADSKY and RÉVUTSKY), A., ii, 122; (BARBIER), A., ii, 735.

**Orthoformic acid**, ethyl ester, action of zinc and magnesium organic compounds on (SHDANOVITSCH), A., i, 10.

**Ortho-oxalic acid**, diphenyl ester (SCHÜLK and MAYR), A., i, 126.

*m*-tolyl ester (RÜTGERSWERKE-AKTIENGESELLSCHAFT and GEUTSCH), A., i, 439.

**Orthothiocarbonic acid**, *p*-tolyl ester and its derivatives (ARNDT), A., i, 919.

**Orthothioformic acid**, benzyl ester, preparation of (SMYTHE), A., i, 966.

*p*-tolyl ester (ARNDT), A., i, 919.

**Osmium**, alkylammonium chlorides of (GUTBIER and MAISCH), A., i, 18.

**Osmichlorides** (GUTBIER and WALTERINGER), A., i, 191.

**Osmotic pressure**. See under Diffusion.

**Ovary**, frog's, glycogen in the (BLEIBTREU), A., ii, 811.

**Oven**, new constant temperature (SIAU), A., ii, 199.

electrical tungsten-resistance (FISCHER and TIEDE), A., ii, 694.

**Ovimumoid**, dissociation of salts of (ROBERTSON), A., i, 91.

**Ox**, liver of. See Liver.

**Oxalacetic acid**, lecture experiment to show the fermentation of (NEURERG and KARCGOZ), A., ii, 976.

brucine salt (HILDITCH), T., 235.

**Oxalatotelluric acid**, salts of (ROSENHEIM and WEINHEBER), A., i, 109.

**Oxalhydrazinic acid**, ethyl ester, and its oxalate and benzylidene derivative (STOLLÉ), A., i, 357.

**Oxalic acid**, preparation of, from sawdust (v. HEDENSTRÖM), A., i, 767.

action of light on, in the presence of uranyl salts (BACON), A., ii, 5; (BRUNER and KOZAK), A., ii, 564.

dissociation constants of (ENKLAAR), A., i, 419; ii, 1071.

neutralisation curve of (ENKLAAR), A., i, 602.

solubility of, in other acids (MASSON), P., 328.

action of, on starch and dextrin (OECHSNER DE CONINCK and RAYNAUD), A., i, 770.

metabolism. See under Metabolism.

fermentative oxidation of (ZALESKI and REINHARD), A., ii, 760.

poisoning (SARVONAT and ROUBIER), A., ii, 815.

excitability of nerves in (CHIARI and FRÖHLICH), A., ii, 1018.

in wines (MONNIER), A., ii, 648.

metallic salts, decomposition of (GANASSINI and SCANDOLA), A., i, 421.

reactions of (OECHSNER DE CONINCK), A., i, 419.

calcium salt, reactions of (OECHSNER DE CONINCK and RAYNAUD), A., i, 352.

dysprosium salts of (JANTSCH and OHL), A., ii, 493.

sodium salt, preparation of (BOEHRINGER & SÖHNE), A., i, 419.

stability of the double salts of, with sodium and nickel, and with sodium and cobalt (DODGSON), P., 260.

yttrium potassium salt of (PRATT and JAMES), A., i, 353.

**Oxalic acid**, preparation of esters of (SCHEUBLE), A., i, 419.  
 thio-, complex salts of (ROBINSON and JONES), P., 279.

**Oxalomonohydroxamic acid** and its silver salt (PALAZZO and OLIVERI-MANDALÀ), A., i, 428.

**Oxalopyrotartaric acid**, ethyl ester, products of the action of hydrobromic acid on (BLAISE), A., i, 708.

**Oxaluria** (SERKOWSKI and MOZDZENSKI), A., ii, 311.

**Oxalyl chloride**, action of, on amines and amides (BORNWATER), A., i, 616.

**Oxalyldibenzanilide** (BORNWATER), A., i, 617.

**Oxalyldi-diglycylglycine**, ethyl ester (BORNWATER), A., i, 617.

**Oxalyldiglycine**, ethyl ester (BORNWATER), A., i, 617.

**Oxalyldiglycylglycine**, ethyl ester (BORNWATER), A., i, 617.

**Oxalyldi-glutaminic acid**, diethyl ester (BORNWATER), A., i, 617.

**Oxalyldimethylethylurethane** (BORNWATER), A., i, 617.

**Oxalyldiureide** (BORNWATER), A., i, 617.

**$\alpha$ -Oxaryl- $\beta$ -methylsuccinic acid**, ethyl ester, *p*-nitrophenylhydrazone (BLAISE and GAULT), A., i, 520.

**Oxalylphenylacetonitrile**, acylation of (DIECKMANN), A., i, 456.

**Oxalsuccinic acid**, ethyl ester, derivatives of (WISLICENUS and WALDMÜLLER), A., i, 603.

**Oxalysuccinonitrile**, acylation of (DIECKMANN), A., i, 456.

**Oxamethane**, action of, with potassium bromoacetamide (MAUGUIN), A., i, 358.

**Oxamide**, aromatic derivatives of (SUIDA), A., i, 365.

**Oxanil-4-arsinic acid**, and nitro- (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), A., i, 594.

**Oxanilic acid**, *p*-cyano-, methyl and ethyl esters of (BOGERT and WISE), A., i, 46.

**Oxanilide**, *p*-amino-, and its salts and *m*-hydroxy- (SUIDA), A., i, 366.  
*di-p*-cyano- (BOGERT and WISE), A., i, 46.

**Oxanilide-*o*-carboxylic acid** and its metallic salts (SUIDA), A., i, 365.

**Oxanthrone** and its acetate (MEYER), A., i, 194.

*iso***Oxazolones**, action of diazomethane on (OLIVERI-MANDALÀ and COPPOLA), A., i, 492.

**Oxazonanthrone** (ULLMANN and VAN DER SCHALK), A., i, 166.

**Oxidation**, selective (JONES and STRONG), A., ii, 168.  
 and reduction by catalysis (ZELINSKY and GLINKA), A., i, 870.

**Autoxidation** (THUNBERG), A., ii, 33.

**Oxide**,  $C_6H_{12}O$ , from  $\delta$ -methyl- $\Delta\beta$ -amylene (UMNOVA), A., i, 250.

**Oxides**, acidic, heat of combination of, with sodium peroxide (MIXTER), A., ii, 966.

**Oximes**, transformation of *syn*- into *anti*- (PATTERSON and McMILLAN), A., i, 648.  
 cyclic, catalytic reduction of (MAILHE and MURAT) A., i, 535.

*N*-phenyl ethers of (ANGELI, ALESSANDRI and AIAZZI-MANCINI), A., i, 544.

**Oxindole-3-aldehyde** and its derivatives (FRIEDELÄNDER and KIELBASINSKI), A., i, 1022.

**Oxindoleanil** and its hydrochloride (PUMMERER and GOTTLER), A., i, 232.

**Oxindole-3-carboxylic acid**, hydroxy-, ethyl ester (KALB), A., i, 681.

**Oxomalonic acid**, ethyl ester, preparation and properties of (CURTISS and STRACHAM), A., i, 353.  
 action of, with arylamines and alcohols (CURTISS, HILL, and LEWIS), A., i, 367.

**Oxonium** dibromides, influence of the masses of reacting substances on the formation of, in organic solvents (TSCHELINZEFF and KONOWALOFF), A., ii, 706.

**Oxyberberine**, synthesis of, and chloro- (PICTET and GAMS), A., i, 483.

*iso***Oxyberberine** and its acetyl derivative and nitroso- (BLAND, PERKIN, and ROBINSON), P., 59.

*neo***Oxyberberine** and its salts (PYMAN), T., 1695; P., 215.

*neo***Oxyberberineacetone** and its hydrochloride (PYMAN), T., 1694; P., 215.

**Oxydase** in fruits (BASSETT and THOMPSON), A., ii, 425.  
 estimation of, in animal tissues (VERNON), A., ii, 750.

**Oxydases**, action of (HERZOG and POLOTZKY), A., i, 935; (HERZOG and MEIER), A., i, 936.  
 colorimetric detection of (LOELE), A., ii, 675.

**Oxygen**, production of, in the liquefaction of air (SWINBURNE), A., ii, 387.  
 extraction of, from commercial copper (GUICHARD), A., ii, 934.  
 spectroscopy of (KAYSER), A., ii, 237, 785; (STEUBING: STARK), A., ii, 558.

**Oxygen**, negative pole spectrum of (CROZE), A., ii, 1041.  
 absorption of ultra-violet rays by (v. WARTENBERG), A., ii, 1.  
 the rectilinear diameter for (MATHIAS and ONNES), A., ii, 387.  
 melting point of (ONNES and CROMMELIN), A., ii, 854.  
 heat of evaporation of (BARSCHALL), A., ii, 582.  
 solubility of, in sea-water (WHIPPLE and WHIPPLE), A., ii, 271.  
 basic properties of (MAASS and MCINTOSH), A., i, 289; (TSCHELINZEFF), A., i, 415; (TSAKALOTOS), A., i, 514.  
 and nitrogen, analogies between derivatives of (ANGELI), A., i, 620.  
 influence of inhalation of, on lactic acid produced by hard work (FELDMAN and HILL), A., ii, 738.  
 influence of respiration of, on the blood (WARBURG), A., ii, 211, 503.  
 necessity of, for growth of mammalian tissue (LOEB and FLEISCHER), A., ii, 1007.  
 absorption of, in respiration (DOUGLAS and HALDANE), A., ii, 737.  
 estimation of dissolved (WINKLER), A., ii, 329, 532.  
 estimation of, in air volumetrically (WATSON), T., 1460; P., 135.  
 estimation of, dissolved in sewage effluents (CLARKE), A., ii, 928.  
**Oxyhaemoglobin**, substances accompanying, in its crystallisation (THOMAS), A., i, 590.  
 oxydase properties of (DE STECKLIN), A., ii, 620.  
 reduction of (WOLFF), A., i, 590.  
**2-Oxy-9-methylpurine** (JOHNS), A., i, 507.  
**Oxyproteic acids**, and their rôle in metabolism (BONDZYNSKI), A., ii, 308.  
 estimation of, in serous fluids and in blood (CZERNECKI), A., ii, 302.  
**Oxyprostosulphonic acid** (BURACZEWSKI and KRAUZE), A., i, 408.  
**Oxysolanol** (ODDO and CESARIS), A., i, 670.  
**3-Oxy-(1)-thionaphthencarboxylic acid**, dichloro-, ethyl ester (KALLE & Co.), A., i, 871.  
**Oxythionaphthylaceanthrenone** (LIEBERMANN and ZSUFFA), A., i, 387.  
**Oxythiophens** (LANFRY), A., i, 740.  
**endo-Oxytriphenyldihydrotriazole** (BUSCH and RUPPENTHAL), A., i, 87.

**Ozone**, formation of (LECHNER), A., ii, 797.  
 formation of, by electrolysis (ARCHIBALD and v. WARTENBERG), A., ii, 1083.  
 preparation of, by chemical means (MALAQUIN), A., ii, 387.  
 production of, at a low temperature (JOB), A., ii, 387.  
 dry, decomposition of (CHAPMAN and JONES), T., 1811; P., 224.  
 estimation of, iodometrically (LECHNER), A., ii, 822.  
**Ozonide**,  $C_8H_{12}O_6$ , from a polymeride of divinyl (LEBEDEFF), A., i, 26.  
 $C_{10}H_{16}O_6$ , from polymeride of isoprene (LEBEDEFF), A., i, 26.  
 $C_{12}H_{20}O_6$ , from polymeride of di-isoprene (LEBEDEFF), A., i, 27.  
**Ozokerite** in petroleum (Koss), A., i, 761.

**P.**

**Paeonol**, presence of, as a glucoside (PÉRON), A., ii, 426.  
**Paeonol-o**, *m*-, and *p*-nitrophenylhydrazone and bromo- (TORREY and ADAMS), A., i, 39.  
**Palladium**, use of, in hydrogenation (BRETEAU), A., i, 123, 533, 776.  
**Palladium alloys** with gold, occlusion of hydrogen by (BERRY), T., 463; P., 56.  
**Palmitic acid**, equilibrium of, with its sodium salt (DONNAN and WHITE), T., 1668; P., 216.  
 separation of, from oleic acid (FALCIOLA), A., i, 174.  
 ammonium salts and separation of, from oleic acid (FALCIOLA), A., i, 5.  
 sodium salt, solutions of (MCBAIN and TAYLOR), A., i, 349.  
**Palmitic acid**,  $\alpha$ -bromo-, amide of, and  $\alpha$ -ido-, calcium salt and amide of (PONZIO), A., ii, 1015.  
**Pancreas**, effect of copious water drinking on the activity of the (HAWK), A., ii, 214.  
 pentose from the (LEVENE and JACOBS : NEUBERG : REWALD), A., i, 97.  
 presence of the secretion of the, in the blood (DRENNAN), A., ii, 995.  
 fetal, passage of the secretion of the, into the maternal blood (CARLSON and DRENNAN), A., ii, 995.  
**Pancreatic extract** and muscle plasma, action of, on sugars (LEVENE and MEYER), A., ii, 414.  
**Papaveraceæ**, alkaloids from the (GADAMER), A., i, 317.

**Papaveraldine**, identity of xanthaline with (DOBSON and PERKIN), T., 135 ; P., 4.

**Paper**, detection of acidity in (STRACHAN), A., ii, 542.

**Paraconic acids**, substituted, conversion of, into cyclopropanedicarboxylic acids (BARRIER and LOCQUIN), A., i, 722.

**Paraffin oil**, solubility of water in (GROSCHUFF), A., ii, 595.

**Paraglycocholic acid** (LETSCHE), A., i, 784.

**Paraldehyde**. See under Acetaldehyde.

**Parathyroideectomy**, effect of, on metabolism (GREENWALD), A., ii, 507.

**Parathyroid tetany** (CARLSON and JACOBSON), A., ii, 632.

**Pareira root**, alkaloids of (SCHOLTZ), A., i, 913.

**Parasite** from Quincy pegmatite (PALLACHE and WARREN), A., ii, 614.

**$\alpha$ - and  $\beta$ -Particles**. See under Photochemistry.

**Passivity**, phenomena of (HABER and ZAWADZKI), A., ii, 1053.

**Pear**, composition of seeds of (HUBER), A., ii, 1024.

tree leaves, arbutin in (BOURQUELOT and FICHTENHOLZ), A., i, 803 ; ii, 143.

**Pearceite**, occurrence of (VAN HORN and COOK), A., ii, 614.

formula of (VAN HORN), A., ii, 807.

**Pearls**, artificial analysis of (CERERO and BAYO), A., ii, 824.

**Peas**, constituents removed from, by water and aqueous solutions (POPPE), A., ii, 428.

**Peganum harmala** (rue), pharmacology of (FLURY), A., ii, 138.

**Penicillium glaucum**, influence of acetic acid on the growth of (REICHEL), A., ii, 144.

**Pentadecyl chloride** (v. BRAUN and SOBECKI), A., i, 598.

**Pentadecylamine**, benzoyl derivative (v. BRAUN and SOBECKI), A., i, 598.

**Pentadecyl- $\alpha$  and  $\beta$ -naphthylamine**, and their salts and derivatives (LE SUEUR), T., 880, 882.

**Pentaethylphloroglucinol**, ethyl ester of (HERZIG and ERTHAL), A., i, 777.

**3:4:2':4':5'-Pentamethoxychalkone** (BARGELLINI and AVRUTIN), A., i, 68.

**4:2':3':4':6'-Pentamethoxychalkone** (BARGELLINI and BINI), A., i, 212.

**$\alpha\gamma\gamma\gamma$ -Pentamethylacetocetic acid**, ethyl ester (WAHLBERG), A., i, 708.

**Pentamethylenecyanoethylylputrescine** (v. BRAUN), A., i, 563.

**Pentamethylenecyanopropylputrescine** (v. BRAUN), A., i, 563.

**Pentamethylenediguanidine**, synthesis of, and its aurichloride (RIPKE), A., i, 620.

**Pentamethylene-ethylputrescine** and its salts (v. BRAUN), A., i, 563.

**Pentamethylenepropylputrescine** and its salts (v. BRAUN), A., i, 563.

**$\alpha\alpha\gamma\gamma$ -Pentamethylglutaric acid**,  $\beta$ -hydroxy, and its silver salt (SAYTZEFF), A., i, 419.

**Pentamethylorcinol** and *monobromo*- (HERZIG, WENZEL, ZEIDLER, and SCHWADRON), A., i, 777.

**Pentamethylphloroglucinol**, compound of, with magnesium methyl iodide (HERZIG and ERTHAL), A., i, 778.

**Pentamethylquercetin**, and amino-, *di*-bromo-, *di*bromonitro-, nitro-, and *trinitro*, and their salts (WATSON), P., 164.

**Pentamethylquercetinazo- $\beta$ -naphthol** (WATSON), P., 165.

**Pentamethylquercetindiazonium chloride** and sulphate (WATSON), P., 165.

**Pentane**,  $\alpha\alpha\epsilon$ -*tetrabromo*- $\alpha\epsilon$ -*dinitro*-, and  $\alpha\epsilon$ -*dinitro*-, and its derivatives (v. BRAUN and SOBECKI), A., i, 831.

$l$ - $\beta$ -*iodo*- (PICKARD and KENYON), T., 65.

*cyclo***Pentane-1-carboxylic acid**, 1-amino-, preparation of, and its copper salt (ZELINSKY), A., i, 974.

*ethyl ester* (ZELINSKY, ANNENKOFF, and KULIKOFF), A., i, 773.

*iso***Pentane- $\alpha\delta$ -diol**, derivatives of (HARRIES and NERESHEIMER), A., i, 798.

*cyclo***Pentane-1:1:3:3-tetracarboxylic acid**, ethyl ester (THOLE and THORPE), T., 2186.

**Pentane- $\alpha\beta\delta$ -tricarboxylic acid**, and its ethyl ester and cyano-, ethyl ester (HOPE and PERKIN), T., 762 ; P., 95.

**Pentane- $\beta\beta\delta$ -tricarboxylic acid**, potassium salts and resolution of (MÖLLER), A., i, 12.

*cyclo***Pentanone**, catalytic hydrogenation of (GODCHOT and TABOURY), A., i, 385.

**Pentan-5-one**,  $\beta$ -bromo- (WOHL and MAAG), A., i, 25.

**Pentan- $\gamma$ -one- $\beta$ -ol** and its cyanohydrin and semicarbazone (GAUTHIER), A., i, 415.

**Pentathionic acid**. See under Sulphur.

$\Delta\beta$ -**Pentenoic acid**, ethyl ester (LESPIEAU), A., i, 106.

$\Delta\alpha$ -**Penten- $\gamma$ -ol**,  $\beta$ -bromo-, and its phenylurethane and  $\alpha\beta$ -*tri*-*iodo*- (LESPIEAU), A., i, 347.

$\Delta\alpha$ -**Pentenylamine** and its derivatives (v. BRAUN), A., i, 613.

**$\Delta^{\alpha}$ -Pentinene- $\gamma$ -ol** (LESPIEAU), A., i, 347.

**Pentosans** in fungi (WICHERS and TOLLENS), A., ii, 63; (DOX and NEIDIG), A., ii, 644. in soils (SHOREY and LATHROP), A., ii, 146. estimation of (BÖDDENER and TOLLENS), A., ii, 75; (FLOHIL), A., ii, 160. estimation of, in cereals and in wood fungi (ISHIDA and TOLLENS), A., ii, 645.

**Pentose** from the pancreas (LEVENE and JACOBS: NEUBERG: REWALD), A., i, 97.

**$\alpha$ -cycloPentylcyclopentanone** and its oxime and semicarbazone (GODCHOT and TABOURY), A., i, 385.

**Pepper**, white, constituents of (BÖDDENER and TOLLENS), A., ii, 64.

**Peppermint oil** (SCHIMMEL & CO.), A., i, 477. from leaves of *Mentha piperita* (MURAOUR), A., i, 138. French, constituents of (SCHIMMEL & CO.), A., i, 893.

**Pepsin** in the gastric juice of the calf (RAKOCZY), A., i, 827. electrical transport of (PEKELHARING and RINGER), A., i, 1051. action of, on elastin and other proteins (ABDERHALDEN and WACHSMUTH; ABDERHALDEN and STRAUCH), A., i, 511; (ABDERHALDEN and FRIEDEL), A., ii, 506. action of, on the products of hydrolysis of casein (ROBERTSON and BIDDLE), A., i, 589. identity of, with rennin (VAN HASSELT), A., i, 248; (PORTER), A., i, 698. detection of, by means of elastin (ABDERHALDEN and MEYER), A., ii, 999.

**Pektone**, Witte's, action of formaldehyde on (SCHRÖVER), A., i, 246. estimation of, in presence of albumoses (SALKOWSKI), A., ii, 626.

**Peptones**, apparatus for cryoscopic measurements of (LEMATTE), A., ii, 447.

**Perboric acid**. See under Boron.

**Perferricyanides**. See under Iron.

**Perhydrase**, reduction of nitrates by (BACH), A., i, 759.

**Perhydridase**, preparation of (BACH), A., i, 412.

**Peridotites** in New Caledonia (LACROIX), A., ii, 406.

**Perillaldehyde** and its derivatives (SEMMLER and ZAAR), A., i, 218.

**Perillic acid and dibromide** (SEMMLER and ZAAR), A., i, 218.

**Perillonitrile** (SEMMLER and ZAAR), A., i, 218.

**Perillyl alcohol** and its derivatives (SEMMLER and ZAAR), A., i, 218.

**Periodic reactions**. See under Affinity, chemical.

**Periodic system** (SCHMIDT), A., ii, 198; (BAUR), A., ii, 480. modification of the (ADAMS), A., ii, 593. significance of the (SANFORD), A., ii, 874. arrangement of the elements in the, in a spiral (EMERSON), A., ii, 198. specific gravities of elements in relation to the (HOPKINS), A., ii, 698. position of the important elements in the (SCHERINGA), A., ii, 594. "cubic," arrangement of radio-elements in the (VAN DEN BROEK), A., ii, 709.

**Permanganates**. See under Manganese.

**Peroxide**,  $C_{40}H_{28}O_4Cl_2$ , from triphenylmethyl-4-carboxyl chloride (STAUDINGER and CLAR), A., i, 639.

**Peroxites**, preparation of (EBLER and KRAUSE), A., ii, 801.

**Peroxydase**, effect of heat on, in milk (VAN ECK), A., ii, 1144.

**Peroxydases**, detection of (FISCHEL), A., ii, 448.

**Pertitanic acid**. See under Titanium.

**Petroleum**, cholesterol and ozokerite in (Koss), A., i, 761. light, lecture experiment, on the extinction of burning (RATHGEN), A., ii, 385.

Argentine, optical investigation of (RAKUSIN), A., i, 761. from Bolivia, optical investigation of (RAKUSIN), A., i, 761.

Roumanian, hydrocarbons from (COSTACHESCU), A., i, 101.

solubility of water in (GROSCHUFF), A., ii, 595.

distillates, action of formaldehyde on (NASTUKOFF and MALJAROFF), A., i, 249.

heavy, determination of the density of (SANDERS), P., 250.

detection of, in turpentine (KLEIN), A., ii, 341.

estimation of sulphur in (SANDERS), P., 329.

**Phagocytosis**, influence of iodoform, chloroform, and other substances on (HAMBURGER, DE HAAN, and BUBANOVIC), A., ii, 504.

**Phase rule**. See under Equilibrium.

**Phenacetylhomopiperonylamine** (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 1015.

**Phenanthraphenazine**, 4-amino-, and 4-hydroxy- (SCHMIDT and SCHAIRER), A., i, 387.

**Phenanthraphenazinearsinic acid** (BERTHEIM), A., i, 1056.

**Phenanthraquinol**, synthesis of acyl derivatives of (KLINGER and ROERDANSZ), A., i, 633.

4-amino-, hydrochloride (SCHMIDT and SCHAIRER), A., i, 386.

**Phenanthraquinone**, action of sunlight on aldehydes and (KLINGER and ROERDANSZ), A., i, 633.

and 4-nitro-, semicarbazones (SCHMIDT, SCHAIRER, and GLATZ), A., i, 239.

4-amino-, 4-hydroxy- and 4-nitro-, and their derivatives (SCHMIDT and SCHAIRER), A., i, 386.

**Phenanthraquinoneoxime**, 3-bromo-, 3- and 4-nitro-, semicarbazones of (SCHMIDT, SCHAIRER, and GLATZ), A., i, 239.

**Phenanthraquinone-2-sulphonic acid**, methyl ester (SANDQVIST), A., i, 191.

**Phenanthraquinone-2-sulphonylchloride** (SANDQVIST), A., i, 190.

**Phenanthrene**, synthesis of (KENNER and TURNER), P., 92.

hydrogenation of, in the presence of palladium (BRETEAU), A., i, 123.

electrolytic reduction of (BRETEAU), A., i, 776.

4- and 9-amino-, 2- and 4-nitro-, and their derivatives (SCHMIDT and HEINLE), A., i, 626.

4-hydroxy-, synthesis of (BEHREND, LUDEWIG, and KLINCKHARD), A., i, 288.

**Phenanthrene series** (SCHMIDT, SCHAIRER, and GLATZ), A., i, 239; (SCHMIDT and SCHAIRER), A., i, 386; (SCHMIDT and HEINLE), A., i, 626.

**5:5'-Phenanthrenebis-3-ethylrhodanic acid** (BUTSCHER), A., i, 333.

**5:5'-Phenanthrenebis-3-phenylrhodanic acid** (BUTSCHER), A., i, 333.

**Phenanthrene-9:10-diketodicarboxylic anhydride** and its silver salt (WILLGERODT and ALBERT), A., i, 883.

**Phenanthrene-2-sulphonic acid**, salts and esters of (SANDQVIST), A., i, 190.

**Phenanthrene-2-sulphonylchloride** and its derivatives (SANDQVIST), A., i, 190.

**Phenanthridone**, preparation of derivatives of (BADISCHE ANILIN- & SODA-FABRIK), A., i, 1026.

**10-Phenanthrol**, 2-benzoylamino- (AUWERS, DANNEHL, and BOENNECKE), A., i, 169.

**9-Phenanthrylacetamide** (WILLGERODT and ALBERT), A., i, 882.

**9-Phenanthrylacetic acid** (WILLGERODT and ALBERT), A., i, 882.

**Phenantriazine**, 3-hydroxy-, 7-bromo-3-hydroxy-, and 7- and 8-nitro-3-hydroxy- (SCHMIDT, SCHAIRER, and GLATZ), A., i, 239.

**Phenazine**, compounds of, with quinol, resorcinol, and catechol (ZEREWITINOFF and v. OSTROMISSLENSKY), A., i, 849.

**Phenazine**, 2:7-dibromo-, 2:7-dichloro-, and 2:7-di-iodo-, and their 5:10-oxides (BAMBERGER and HAM), A., i, 684.

**Phenazonoxonium**, 5-amino-, and 3:5-diamino-, 5-acetyl derivative, salts of (KEHRMANN and LOWRY), A., i, 1033.

**Phenazthionium**, 3:5-diamino-, 5-acetyl derivative, salts of (KEHRMANN and STEINBERG), A., i, 1034.

**o-Phenetidine**, 5-chloro-, and its acetyl derivative (ORTON and KING), T., 1190.

**p-Phenetidine**, 5-chloro-, and its hydrochloride and acetyl derivative (ORTON and KING), T., 1190.

**p-Phenetylbiguanide** and its derivatives (COHN), A., i, 928.

**Phenol**, molecular complexity of salts in (HARTUNG), A., ii, 697.

and water, the system (SMITS and MAARSE), A., ii, 870.

quantitative examination of the introduction of one atom of halogen into (HOLLEMAN and RINKES), A., i, 535.

bromination of (DINWIDDIE and KASTLE), A., i, 962.

oxidation of, by bacteria (FOWLER, ARDERN, and LOCKETT), A., ii, 139.

and o-, and p-nitro-, compounds of, with benzoyldianilinostilbene (EVEREST and McCOMBIE), T., 1760.

derivatives containing a mobile nitro-group, syntheses with (MELDOLA and KUNTZEN), T., 36, 1283, 2034; P., 157, 263.

detection of (WILKIE), A., ii, 547.

estimation of, and p-cresol in urine (SIEGFRIED and ZIMMERMANN), A., ii, 72, 941.

**Phenol**, o-amino-, salts of, with formic and o-hydroxyphenyloxamic acids and condensations with acetylacetone (SUIDA), A., i, 284.

2:4:6-tribromo-, red and white silver salts and yellow mercurous salts of (TORREY and HUNTER), A., i, 283.

2-bromo-4-amino-, and 2-chloro-6-bromo-4-amino- (RAIFORD), A., i, 993.

**Phenol**, 4-chloro-6-nitro-2-amino, acetyl derivative (AKTIEN-GESELLSCHAFT FÜR ANILIN-FABRIKATION), A., i, 853.

*tri-iodo*-, orange mercurous salt (TORREY and HUNTER), A., i, 283.

*p*-nitro-, compound of, with quinonedi-imine (KNORR), A., i, 654.

*β*-*p*-nitro-, colour change in, produced by sunlight (BARKER), P., 158.

2:3:5-*trinitro*-4-amino-, propionyl derivative (MELDOLA and KUNTZEN), T., 2041.

dinitro-*p*-amino-, valeryl derivative, and 2:3:5-*trinitro*-1:4-*di*amino-, isovaleryl derivative (MELDOLA and KUNTZEN), T., 2042.

**Phenols**, capillary rise of (SKRAUP and PHILIPPI), A., ii, 587.

cryoscopy of (CORNEC), A., ii, 853.

alkylation of (HERZIG and ERTHAL), A., i, 777.

chlorination of (ORTON and KING), T., 1185; P., 139.

oxidation of, by ferric salts (COLIN and SÉNÉCHAL), A., ii, 872.

condensation of, with anthraquinone (SCHARWIN, KUSNEZOFF, NAUMOFF, GANDURIN, BJENKOFF, and DMITRIEFF), A., i, 655.

action of bromine and chlorine on (ZINCKE, FROHNEBERG, and KEMPF), A., i, 439.

action of iodine on, and their volumetric estimation (WILKIE), A., ii, 546.

catalytic oxidation of, in presence of iron salts (COLIN and SÉNÉCHAL), A., ii, 795.

additive compounds of, with aromatic polynitro-derivatives (SUDBOROUGH and BEARD), T., 209; P., 5.

*o*-alkylated, action of nitric acid on halogen derivatives of (ZINCKE and BREITWEISER), A., i, 215.

heterocyclic, *o*-arylazo-compounds of (BÜLOW and HECKING), A., i, 244.

**Phenols**, nitro, ammonium salts of (KORCZYNSKI), A., i, 276.

**Phenols**, estimation of, in herbivorous urine (LIECHTI and MOOSER), A., ii, 942.

**Phenolanthrone**, *tetrabromo*, *di*-, *tetra*- and *hexa-nitro*- (SCHARWIN, KUSNEZOFF, NAUMOFF, GANDURIN, BJENKOFF, and DMITRIEFF), A., i, 656.

**Phenolase**, behaviour of, to acids (BACH and SBARSKY), A., i, 824.

**Phenol-3-carboxylic acid**, 4-amino-, acetyl derivative (KALLE & Co.), A., i, 666.

**Phenolcarboxylic acids**, methylcarbonato-derivatives of, and their use in synthetic operations (FISCHER and FREUDENBERG), A., i, 874.

**Phenolic ethers**, elimination of methoxy-groups from (THOMS and SIEBELING), A., i, 717.

additive compounds of, with aromatic polynitro-derivatives (SUDBOROUGH and BEARD), T., 214; P., 5.

**Phenolphthalein**, physiological action of (KOEHLER), A., ii, 515.

salts of (KOBER and MARSHALL), A., i, 300.

*tetra*- and *octabromo*-, *tetrabromotetra-iodo*-, and *tetraiodo*- (RUPP), A., i, 301.

estimation of, volumetrically (ZOTIER), A., ii, 163.

**Phenolphthalein diphenyl ether** (FERRARIO and NEUMANN), A., i, 317.

**Phenolphthalic acid**, potassium salts of (KOBER and MARSHALL), A., i, 984.

**Phenolsulphonic acid** method of estimating nitrates in water (CHAMOT, PRATT, and REDFIELD), A., ii, 331.

**Phenol-*m*-sulphonic acid**, isolation of, and its metallic salts (OBERMILLER), A., i, 442.

**Phenol-*o*-sulphoxide**, *p*-chloro-, ethyl ether (HILDITCH and SMILES), T., 416.

dibenzoyl derivative (HILDITCH and SMILES), T., 980.

**Phenosafranine**, isomeride of (KEHRMANN and RIERA Y PUNTI), A., i, 926.

*iso***Phenosafranine**, salts and derivatives of (KEHRMANN and RIERA Y PUNTI), A., i, 927.

**Phenothioxin**, formation of (FERRARIO), A., i, 555.

3-chloro- (AKTIEN-GESELLSCHAFT FÜR ANILIN-FABRIKATION), A., i, 903.

synthesis of derivatives of, and 2:7-*di*-chloro-, and its oxides (HILDITCH and SMILES), T., 413; P., 44.

**Phenothioxonium hydroxide**, 2:7-*di*-chloro- (HILDITCH and SMILES), T., 979.

**Phenoxazine**, 5-amino-, and its hydrochloride and acetyl derivative (KEHRMANN and LOWRY), A., i, 1033.

**Phenoxyazonium chloride**, 3:5:9-*tri*-amino-, influence of, on trypanosomes (LAVERAN and ROUDSKY), A., ii, 911.

**Phenoxyde**, *p*-nitrothio-, sodium (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), A., i, 441.

**Phenoxyacetic acid**, salts of the rare earth metals (PRATT and JAMES), A., ii, 893.

thulium salt (JAMES), A., ii, 892.

**Phenoxyacetylacetophenone** (v. WALTHER and LITTER), A., i, 237.

**$\alpha$ -Phenoxyacetylphenylacetonitrile** and  $p$ -chloro- (v. WALTHER and HERSCHEL), A., i, 237.

**$\epsilon$ -Phenoxyamyltrimethylammonium** hydroxide and iodide (v. BRAUN), A., i, 612.

**1-Phenoxyanthraquinone** monoxime (FREUND and ACHENBACH), A., i, 70.

**$\delta$ -Phenoxybutyltrimethylammonium** hydroxide and its salts (v. BRAUN), A., i, 612.

**$\gamma$ -Phenoxy- $\alpha$ - $p$ -chlorophenylacetoacetic acid**, ethyl and methyl esters and their derivatives (v. WALTHER and HERSCHEL), A., i, 238.

**$\gamma$ -Phenoxy- $\alpha$ - $p$ -chlorophenylcrotononitrile,  $\beta$ -amino- (v. WALTHER and HERSCHEL), A., i, 238.**

**Phenoxyethyl ethyl ketone** and its derivatives (BLAISE and PICARD), A., i, 175.

**$\gamma$ -Phenoxy- $\alpha$ -phenylacetooacetamide** (v. WALTHER and HERSCHEL), A., i, 238.

**$\gamma$ -Phenoxy- $\alpha$ -phenylcrotononitrile,  $\beta$ -amino** (v. WALTHER and HERSCHEL), A., i, 237.

**$\gamma$ -Phenoxypropyltrimethylammonium** iodide (v. BRAUN), A., i, 612.

**Phenyl acetate,  $\alpha$ -amino**, diacetyl derivative (DIEPOLDER), A., i, 853.

**$\Delta\alpha$ -butenyl ether** (v. BRAUN), A., i, 612.

**$\delta$ -dimethylaminobutyl ether** (v. BRAUN), A., i, 612.

**$\epsilon$ -dimethylaminoamyl ether** and its picrate (v. BRAUN), A., i, 612.

**ether, 2:6-dinitro-** (BORSCHE and RANTSCHEFF), A., i, 330.

**mercaptan, iodo-** (ZINCKE and JÖRG), A., i, 40.

**mercaptans, nitro-**, preparation of (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), A., i, 441.

**Phenylacetaldehyde** diacetate (WOHL and MAAG), A., i, 14.

**oxime of** (EMDE), A., ii, 314.

**$\alpha$ -Phenylacetamide,  $\alpha$ -amino-**, and its derivatives and  $\alpha$ -chloroacetylamino-, and  $\alpha$ -oxalylamino- (CLARKE and FRANCIS), T., 320; P., 22.

**Phenylacetamide**, cyano-, preparation of (PELLIZZARI), A., i, 1035.

**Phenylacetic acid**, yttrium salt (PRATT and JAMES), A., ii, 893.

**$\alpha$ -amino- $p$ -hydroxy-**, and its methyl ether, carbamide derivatives of (ALOY and RABAUT), A., i, 371.

**$p$ -hydroxy-**, preparation of (ALOY and RABAUT), A., i, 780.

**Phenylacetic acid, 2:6-dinitro-**, and its methyl ester (BORSCHE and RANTSCHEFF), A., i, 332.

**$d$ -Phenylacetic acid, amino- $\alpha$ -acetyl derivative**, synthesis of, in the perfused liver (NEUBAUER and WARBURG), A., ii, 52.

**Phenylacetoacetic acid, 2:6-dinitro-**, ethyl ester, and its *O*-benzoyl derivative (BORSCHE and RANTSCHEFF), A., i, 332.

**Phenylacetonitrile (benzyl cyanide)**, sodium derivative, action of esters on (BODROUX), A., i, 129.

action of acid chlorides, anhydrides, and of ketones on (BODROUX), A., i, 545.

action of anisaldehyde and piperonaldehyde on (BODROUX), A., i, 783.

**Phenylacetonitrile,  $\omega$ -nitro-** (STEINKOPF, MALINOWSKI, and SUPAN), A., i, 946.

**$\alpha$ -Phenylacetyltrimethylamine** hydrochloride (EMDE and RUNNE), A., i, 715.

**$\alpha$ -Phenylacetyltrimethylamine** hydrochloride (EMDE and RUNNE), A., i, 715.

**$\alpha$ -Phenylacetonitrile** salts (EMDE and RUNNE), A., i, 714.

**Phenyl acetoxyl-*tert*-butyl ketone** and its *p*-nitrophenylhydrazone (BLAISE and HERMAN), A., i, 880.

**Phenylacetyl chloride,  $p$ -nitro-** (WEDEKIND, HÄUSSERMANN, WEISSWANGE, and MILLER), A., i, 220.

**Phenylacetyl- $\beta$ -3:5-dimethoxyphenylethylamide** (SALWAY), T., 1322; P., 192.

**Phenylacridine, dibromo-**, methobromide of (KAUFMANN, WIDMER, and ALBERTINI), A., i, 749.

**Phenylacrylamide,  $\alpha$ -cyano- $p$ -hydroxy-** (SCLAVI), A., i, 398.

**Phenylacylamines**, hydrazones of (BUSCH and HEFELE), A., i, 582.

**Phenylalanine**, synthesis of (WHEELER and HOFFMAN), A., i, 499.

***dl*-Phenylalanine**, 3:4-dihydroxy- (FUNK), T., 557; P., 56.

**Phenylalaninehydantoin** (WHEELER and HOFFMAN), A., i, 498.

**Phenylallophanic acid**, methyl ester (DIELS and GOLLMANN), A., i, 956.

**Phenylallylcarbinol**, synthesis of, and its oxidation (KLIMENKO), A., i, 444.

**Phenylaminoacetic acid**, ethyl ester, hydrochloride (WHEELER and BRAUTLECHT), A., i, 501.

**$p$ -hydroxy-**, behaviour of, in the animal body (FROMHERZ), A., ii, 314.

**Phenyl- $\alpha$ -aminoethylcarbinol** and its salts (SCHMIDT and CALLIESS), A., i, 742.

**Phenyl  $\alpha$ -aminoethyl ketone** and its salts (SCHMIDT and CALLIESS), A., i, 742.

**Phenylaminoguanidine hydrobromide** (PELLIZZARI and LARIA-BOTTE), A., i, 337.

**Phenylammonium** osmichloride (GUTBIER and WALBINGER), A., i, 191.

**platinibromide** (GUTBIER, BAURIEDEL, and OBERMAIER), A., i, 33.

**$\epsilon$ -Phenylamyl alcohol** and its acetate (v. BRAUN, DEUTSCH, and KRÜBER), A., i, 968.

**$\epsilon$ -Phenylamylidemethylamine** and its picrate (v. BRAUN), A., i, 613.

**Phenylamylene** (v. BRAUN), A., i, 613.

**Phenylanisylacetic acid,  $\alpha$ -hydroxylactone** of (STOERMER and DECKER), A., i, 665.

**1-Phenyl-4-anisylidenehydantoin** (WHEELER and HOFFMAN), A., i, 500.

2-thio-, and its sodium salt (WHEELER and BRAUTLECHT), A., i, 500.

**$\beta$ -Phenyl- $\beta$ -anisyl- $\alpha$ -methylhydracrylic acid** and its methyl ester and amide (STOERMER, FRIDERICI, BRÄUTIGAM, and NECKEL), A., i, 297.

**1-Phenyl-5-anisylpyrazole-3-carboxylic acid** and its copper salt (BAUER and DIETERLE), A., i, 921.

**2-Phenylanthraquinone** (SCHOLL and NEOVIUS), A., i, 452.

**Phenyl-1- and 2-anthraquinonylcarbamide** (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), A., i, 469, 995.

**Phenyl-2-anthraquinonylthiocarbamide** (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), A., i, 469.

**2-Phenyl-9-anthrone** (SCHOLL and NEOVIUS), A., i, 452.

**Phenylarsenious oxide, aminohydroxy-** (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), A., i, 1055.

**Phenylarsine,  $p$ -amino-, tetraiodide** hydriodide (PATTA and CACCIA), A., i, 1054.

**Phenylarsinic acid,  $p$ -amino-, reduction products of** (EHRLICH, BERTHEIM, and SCHMITZ), A., i, 593.

**3:4-diamino-** (BERTHEIM), A., i, 1055.

**$p$ -iodo-, and its derivatives, pharmacological action of** (MAMELI and PATTA), A., ii, 911, 912.

**$p$ -di-iodohydroxy-** (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), A., i, 1055.

**nitro-4-amino-** (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), A., i, 594, 760.

**Phenylarsinic oxide,  $p$ -amino- and its acetyl derivative, halogen salts of** (BERTHEIM), A., i, 593.

**Phenylauramine, 4-nitro-, 2:4-dinitro-, and 2:4:6-trinitro-, and their hydrochlorides** (SEMPER), A., i, 580.

**$p$ -Phenylazo-oxanilide** (SUIDA), A., i, 365.

**Phenyl- $\alpha$ -benzdi-iminazole, 2:5-di- $p$ -amino-, and its diacetyl derivative** (KYM and KOWARSKI), A., i, 1044.

**Phenylbenzidoxazole, 1:5-di- $p$ -amino-, and 1:5-di- $p$ -nitro-** (KYM and KOWARSKI), A., i, 1045.

**4-Phenylbenzophenone** chloride (NORRIS, THOMAS, and BROWN), A., i, 32.

**1-Phenyl-1:2:3-benzotriazole, 7-amino-, 4-chloro-7-amino-, 7-nitro- and *op*-dinitro-** (BORSCHE and RANTSCHEFF), A., i, 331.

**2-Phenyl-2:1:3-benzotriazole, 4-nitro-** (BORSCHE and RANTSCHEFF), A., i, 331.

**1-Phenyl-1:2:3-benzotriazole-5-sulphonic acid** (SCHWALBE and WOLFF), T., 107.

**2-Phenyl-1:3-benzoxazine-4-one, action of ammonia and amines on** (TITHERLEY and HUGHES), T., 1493; P., 190.

**2-Phenyl-1:3-benzoxazine-4-one, 6-bromo-** (HUGHES and TITHERLEY), T., 27.

**p-Phenylbenzoyl cyanide** (VORLÄNDER, FRIEDBERG, VAN DER MERVE, ROSENTHAL, HUTH, and v. BODECKER), A., i, 866.

**Phenylbenzylidemethylammonium chloride** and hydroxide sulphonic anhydride (BADISCHE ANILIN- & SODA-FABRIK), A., i, 627.

reduction of, and aurichloride and platinichloride (EMDE and SCHELLBACH), A., i, 282.

**Phenylbenzylidemethylammoniumdisulphonic acid, sodium and calcium salts** (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), A., i, 852.

**1-Phenyl-4-benzylhydantoin, 2-thio-** (BRAUTLECHT), A., i, 922.

**$\beta$ -Phenyl- $\gamma$ -benzylidene- $\alpha$ -ethylbutyric acid,  $\beta$ -hydroxy-, methyl ester** (KOHLER, HERITAGE, and MACLEOD), A., i, 863.

**1- and 3-Phenyl-4-benzylidenehydantoin, and 2-thio-** (WHEELER and BRAUTLECHT), A., i, 500.

**$\beta$ -Phenyl- $\gamma$ -benzylidene- $\alpha$ -methylbutyric acid,  $\beta$ -hydroxy-, ethyl esters** (KOHLER, HERITAGE, and MACLEOD), A., i, 862.

**Phenylberberine** and its salts (GADAMER and STEINBRECHER), A., i, 153.

*iso*Phenylberberine and its salts (GADAMER and STEINBRECHER), A., i, 154.

Phenylbromoacetic acid, menthyl ester (COHEN), T., 1065.

1-Phenyl-4- $\alpha$ -bromobenzylidenehydantoin, 2-thio- (JOHNSON and BRAUTLECHT), A., i, 813.

Phenyl bromo-*p*-methoxystyryl ketone (WILSON and BOON), P., 198.

$\alpha$ -Phenyl- $\Delta$ - $\gamma$ -butadiene, addition of hydrogen bromide to (RIIBER), A., i, 979.

$\beta$ -Phenylbutan- $\beta$ -ol- $\gamma$ -one (*phenyldimethyl ketol*) and its phenylmethylhydrazone (DIELS and JOHLIN), A., i, 254.

$\alpha$ -Phenylbutan- $\gamma$ -one and its oxime and semicarbazone (SENDERENS), A., i, 302.

Phenyl isobut enyl ketone and its *p*-nitrophenylhydrazone (BLAISE and HERMAN), A., i, 881.

Phenylbutinene (ANDRE), A., i, 277.

$\delta$ -Phenylbutyl alcohol and its phenylurethane (v. BRAUN, DEUTSCH, and KRUBER), A., i, 968.

1-Phenyl-2-*iso*butylbenzimidazole, 4:7-dinitro-6-hydroxy- (MELDOLA and KUNTZEN), T., 2043.

$\alpha$ -Phenyl-*sec*-butylmalonic acid (INGLIS), T., 542.

1-Phenyl-2-*iso*butyl-3-methylbenzimidazolium iodide and chloride, 4:7-dinitro-6-hydroxy- (MELDOLA and KUNTZEN), T., 2043.

$\delta$ -Phenylbutyl methyl ketone and its oxime (BORSCHE), A., i, 880.

1-Phenyl-3-*tert*-butyl-5-pyrazolone (WAHLBERG), A., i, 708.

5-Phenyl-1-*tert*-butyl-1:2:3:4-tetrazole (SCHROETER), A., i, 505.

$\gamma$ -Phenylbutyric acid, ethyl ester (v. BRAUN, DEUTSCH, and KRUBER), A., i, 968.

Phenylcamphoformeneamine, *p*-chloro- (TINGLE and BATES), A., i, 55.

Phenylcamphoformeneaminecarboxylic acid, methyl ester and dibenzylamine salt, and *p*-chloro- (TINGLE and BATES), A., i, 54.

Phenylcarbimide, action of, on sodium nitromethane and nitroethane (STEINKOPF and DAEGE), A., i, 280.

Phenylcarbithionic acid. See Benzoic acid, *dithio*.

*o*-hydroxy-. See Salicylic acid, *di-thio*.

Phenylchloroacetic acid, menthyl ester (COHEN), T., 1065.

$\beta$ -Phenylchloroacetic acid, methyl and ethyl esters (MCKENZIE and BARROW), T., 1917.

1-Phenyl-4- $\alpha$ -chlorobenzylidenehydantoin, 2-thio- (JOHNSON and BRAUTLECHT), A., i, 813.

1-Phenyl-4-*p*-chlorophenyl-3-phenoxy-methylpyrazolone, 5-imino-, and its derivatives (v. WALTHER and HERSCHEL), A., i, 238.

Phenyl trichloromethyl sulphide, acetylaminochloro-, *p*-iodo-, and *p*-nitro- (ZINCKE and JORG), A., i, 40.

Phenylcinchoninic acid (*atophan*), influence of, on purine metabolism (STARKENSTEIN), A., ii, 753; (FROMHERZ), A., ii, 1016.

$\beta$ -Phenylcinnamylideneacetic acid (KOHLER, HERITAGE, and MACLEOD), A., i, 863.

1-Phenyl-4-cinnamylidenehydantoin, 2-thio- (WHEELER and BRAUTLECHT), A., i, 501.

Phenylcoumarin, 2:6-dinitro- (BORSCHE and RANTSCHER), A., i, 332.

$\beta$ -Phenylcoumarin, 4:4'-dihydroxy- (BARGELLINI and LEONARDI), A., i, 902.

$\beta$ -Phenylcoumarins (BARGELLINI and LEONARDI), A., i, 901; (BARGELLINI and FORLI-FORTI), A., i, 902.

1-Phenylcoumarone, bromo- (STOERMER and DECKER), A., i, 665.

2-Phenylcoumarone, 1-bromo-, and 1-nitro- (STOERMER and DECKER), A., i, 665.

2-*p*-bromo-, 2-*p*-chloro-, 1-chloro-2-*p*-bromo-, and 1-chloro-2-*p*-chloro- (STOERMER and HILDEBRANDT), A., i, 666.

Phenylisocrotonic acid, ethyl ester (SUDBOROUGH and THOMAS), T., 2314.

Phenylcyanomethylenecamphor (FORTER and WITHERS), P., 327.

1-Phenyl-2:5-dibenzhydryl-1:3:4-triazole, and *di*-*w*-chloro- (STOLLE and LAUX), A., i, 509.

Phenyldibenzylcarbinol, preparation of (DAVIES and KIPPING), T., 299.

$\alpha$ -Phenyl- $\alpha\beta$ -dibenzylhydrazine, acetyl and benzoyl derivatives of (FRANZEN and KRAFT), A., i, 817.

Phenyldiethylammonium platinibromide (GUTBIER, BAURIEDEL, and OBERMAIER), A., i, 33.

$\alpha$ -Phenyl- $\beta\beta$ -diethylhydrazine and its derivatives (WIELAND and FRESSEL), A., i, 495.

Phenyldiethylsilic平 (KIPPING and HACKFORD), T., 141; P., 9.

Phenyldiguaniide, *m*-nitro-, and its salts (COHN), A., i, 928.

Phenyldiguaniide-*p*-carboxylic acid, ethyl ester and salts of (COHN), A., i, 929.

**Phenyldiguanide-*o*-carboxylic anhydride** and its hydrochloride (COHN), A., i, 929.

**2-Phenyldihydro-1:3-benzoxazine-4-one**, 6-bromo- (HUGHES and TITHERLEY), T., 23.

**1-Phenyl-1:3-dihydro-2-perimidone**, *op*-dinitro- (SACHS and FORSTER), A., i, 755.

**10-Phenyldihydrophenazine**, 1:3:7-tri-nitro- (KEHRMANN and RIERA Y PUNTI), A., i, 926.

**Phenyldimethylammonium** platinibromide (GUTBIER, BAURIEDEL, and OBERMAIER), A., i, 33.

**1-Phenyl-2:3-dimethylbenzimidazolium**, chloride, 4:7-dinitro-6-hydroxy-1-*p*-chloro- (MELDOLA and KUNTZEN), T., 2040.

hydroxide, 4:7-dinitro-6-hydroxy-, and its salts (MELDOLA and KUNTZEN), T., 1290.

**1-Phenyl-2:3-dimethylbenzimidazolol**, 4:7-dinitro-6-hydroxy- (MELDOLA and KUNTZEN), T., 1295.

4:7-dinitro-6-hydroxy-1-*p*-chloro- (MELDOLA and KUNTZEN), T., 2040.

**1-Phenyl-2:3-dimethyl-6-benzimidazolone**, 4:7-dinitro-1-*p*-chloro- (MELDOLA and KUNTZEN), T., 2040.

**1-Phenyl-3:6-dimethyl-1:2:7-benztriazole**, 4-hydroxy-, and its salts (BÜLOW and HAAS), A., i, 88.

**1-Phenyl-4:4-dimethyl-3-*tert*-butyl-5-pyrazolone** (WAHLBERG), A., i, 708.

**2-Phenyl-4:6**, and 5:6-dimethyl-1:2-dihydropyridone, 3-hydroxy- (THOLE and THORPE), T., 2237.

**1-Phenyl-4:5-dimethylhydouracil**, 4-bromo-5-hydroxy- (BREMER), A., i, 161.

**1-Phenyl-3:6-dimethyl-4-ethyl-1:2:7-benztriazole**, 4-hydroxy- (BÜLOW and HAAS), A., i, 89.

**α-Phenyl-δδ-dimethylfulgide**, *p*-chloro- (STOBBE and WAHL), A., i, 375.

**γ-Phenyl-δδ-dimethyl-Δβ-hexene** (LUCAS), A., i, 636.

**Phenyldimethylisooxazolone** (HALLER and BAUER), A., i, 568.

**γ-Phenyl-ββ-dimethylpentan-γ-ol** (LUCAS), A., i, 636.

**5-Phenyl-2:8-dimethylphenazonium**, and 3-amino-, and 3:7-diamino-, and their salts (ORLOFF), A., i, 89.

**1-Phenyl-2:2-dimethylcyclopropane** (LUCAS), A., i, 636.

**1-Phenyl-3:5-dimethylpyrazoleimino-3'-phenyl-isooxazolone** (MEYER), A., i, 687.

**1-Phenyl-3:5-dimethylpyrazoleimino-3'-phenyl-isooxazolone**, 2:5-thio-(thiopyrine)-*o*-, *m*-, and *p*-amino-, *p*-4-diamino-, *o*-, *m*-, and *p*-nitro-, and *p*-4-dinitro-, and their salts and derivatives (MICHAELIS, GRAFF, GESING, and BOIE), A., i, 234.

4-isovalerylamino-, and 4-*a*-bromoiso-valerylamino- (KNOLL & Co.), A., i, 166.

**Phenyldimethylpyrazoloneazophenylisooxazolone** (MEYER), A., i, 341.

**4-Phenyl-2:6-dimethylpyroxonium** salts (v. BAEYER and PICCARD), A., i, 901.

**1-Phenyl-3:5-dimethyl-1:2:4-triazole** and its salts (PELLIZZARI), A., i, 1036.

**α-Phenyl-ββ-dimethylvinyl** benzoate (HALLER and BAUER), A., i, 727.

**α-Phenyl-δ-diphenylenefulgenic acid**, (STOBBE, BADENHAUSEN, HENNICKE, and WAHL), A., i, 381.

**α-Phenyl-δ-diphenylenefulgide** (STOBBE, BADENHAUSEN, HENNICKE, and WAHL), A., i, 381.

**β-Phenyl-β-diphenylmethyldihydroxylamine** (ANGELI, ALESSANDRI, and AIAZZI-MANCINI), A., i, 544.

**Phenyldi-*p*-tolylacetonitrile** (VORLÄNDER, FRIEDBERG, VAN DER MERVE, ROSENTHAL, HUTH, and v. BODECKER), A., i, 867.

***m*-Phenylenebiguanide** and its picrate (COHN), A., i, 929.

**3:3'-Phenylenebis-2-methyl-4-quinazolone** (BOGERT, GORTNER, and AMEND), A., i, 581.

***m*-Phenylenebis-2:5-imino-1-phenyl-2:3-dimethylpyrazole** and its salts (MICHAELIS, WURL, and DOEPMANN), A., i, 1042.

**3:3'-*m*-Phenylenebis-2-*m*-nitrophenyl-4-quinazolone** (BOGERT, GORTNER, and AMEND), A., i, 582.

**o-Phenylenediamine**, 3-nitro- (BORSCHE and RANTSCHEFF), A., i, 330.

***m*-Phenylenediamine**, 2-chloro-, di-benzoyl derivative (BORSCHE and RANTSCHEFF), A., i, 330.

***p*-Phenylenediamine**, 3-nitro- and 2:3-dinitro-, 1:4-*di-p*-nitro-benzoyl derivatives (KYM and KOWARSKI), A., i, 1044.

**o**, ***m***, and ***p*-Phenylenediammonium** platinibromide (GUTBIER, BAURIEDEL, and OBERMAIER), A., i, 33.

**1:1'-*p*-Phenylene-2:2'-dimethylbisbenzimidazole**, 4:4':7:7'-tetranitro-6:6-dihydroxy-, and its silver salt (MELDOLA and KUNTZEN), T., 40.

***o*-Phenylenedimethylamine**, 3-nitro- (BORSCHE and RANTSCHEFF), A., i, 330.

**p-Phenylenediquinoxanthenol** bromide hydrobromide (CONE and WEST), A., i, 806.

**p-Phenylenedixanthenol** and its salts (CONE and WEST), A., i, 805.

**Phenylethane**,  $\beta$ -nitro- $\alpha$ -2:5-trihydroxy- (REMFRY), T., 287.

**Phenylethanol**, *p*-hydroxy-. See Tyrosol.

**$\beta$ -Phenyl- $\alpha$ -ethylacrylic acid**, methyl ester (POSNER), A., i, 53.

**Phenylethylamine**,  $\alpha$ -*p*-hydroxy-, *d*-caniphorsulphonate, and its active forms and their benzoyl derivatives (MOORE), T., 419; P., 42.

**$\beta$ -Phenylethylamine**, and its aurin- and platinichlorides (EMDE), A., ii, 314.

*o*-hydroxy-, and *m*-hydroxy-, hydrochloride (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 629.

*p*-hydroxy-, preparation of (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 437.

**Phenylethylamines**, hydroxy-, preparation of (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 629.

**$\omega$ -Phenylethylaminoacetophenone** semicarbazones (BUSCH and HEFELE), A., i, 584.

**$\beta$ -Phenylethylaminomalon- $\beta$ -phenyl-ethylamide** and its salts (DECKER and BECKER), A., i, 714.

**Phenylethylammonium** platinibromide (GUTBIER, BAURIEDEL, and OBERMAIER), A., i, 33.

**1-Phenyl-2-ethylbenzimidazole**, 4:7-dinitro-6-hydroxy- (MELDOLA and KUNTZEN), T., 2041.

**Phenylethylcarbinol** (DAVIES and KIPPING), T., 298.

hydrogen succinate of (PICKARD and KENYON), T., 59.

**d-Phenylethylcarbinol**, and the brucine salt of the hydrogen succinate of (PICKARD and KENYON), T., 60.

**l-Phenylethylcarbinol**, and hydrogen succinate of, and its cinchonidine salt (PICKARD and KENYON), T., 61.

**Phenylethylalkylamines**, hydroxy-, preparation of (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 629.

**$\beta$ -Phenylethylidethylamine** and its picrate and platinichloride (v. BRAUN), A., i, 35.

**Phenylethyldimethylamine**, *m*-hydroxy- (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 629.

**$\alpha$ -Phenylethylethylamine** and its derivatives (WIELAND and FRESSEL), A., i, 496.

**$\beta$ -Phenylethylethylamine** and its derivatives (v. BRAUN), A., i, 35.

**$\beta$ -Phenylethylethylcyanamide** (v. BRAUN), A., i, 35.

**$\beta$ -Phenylethylglycine** and its hydrochloride (DECKER and BECKER), A., i, 714.

**$\alpha$ -Phenyl- $\epsilon$ -ethyl- $\Delta$ xy-heptadien- $\epsilon$ -ol** (REYNOLDS), A., i, 861.

**1-Phenyl-4-ethylhydantoin**, 2-thio- (BRAUTLECHT), A., i, 922.

**$\beta$ -Phenylethylidenebishydrazobenzene** (RASSOW and BURMEISTER), A., i, 820.

**Phenyl ethyl ketone**, azine of (KNOPFER), A., i, 1034.

**1-Phenyl-2-ethyl-3-methylbenzimidazolium** iodide and chloride, 4:7-dinitro-6-hydroxy- (MELDOLA and KUNTZEN), T., 2041.

**$\beta$ -Phenylethylmethylcyanamide** (v. BRAUN), A., i, 35.

**Phenylethylisoxazolone** (HALLER and BAUER), A., i, 568.

**$\beta$ -Phenylethylphenylcyanamide** (v. BRAUN), A., i, 35.

**5-Phenyl-2-ethyl-3-pyrazolidone**, 1-nitroso (MUCKERMANN), A., i, 683.

**Phenylethyltrimethylammonium** salts (EMDE), A., ii, 314.

bromide (v. BRAUN), A., i, 35.

**$\gamma$ -Phenyl- $\alpha$ -fluorenylparaconic acid** (STOBBE, BADENHAUSEN, HENNICK, and WAHL), A., i, 381.

**9-Phenylfluorene** (POPE and HOWARD), T., 548; P., 53.

**1-Phenyl-4-furylylidenehydantoin**, 2-thio- (WHEELER and BRAUTLECHT), A., i, 501.

**Phenylglycine-2-carboxylic acid**, 4:6-dibromo-, methyl ester (ULLMANN and KOPETSCHNI), A., i, 298.

3-chloro-, and its dimethyl ester and 3:4-dichloro-, methyl ester (BADISCHE ANILIN- & SODA-FABRIK), A., i, 539.

6-chloro-4-bromo-, and 4:6-dichloro-, methyl esters (BADISCHE ANILIN- & SODA-FABRIK), A., i, 156.

**Phenylglycinesulphonylchloride**, bromo- (CLAASZ), A., i, 437.

**Phenylglycinedithiocarboxylic acid**, benzoyl hydrogen ester of (SIEGFRIED and WEIDENHAUPT), A., i, 116.

**Phenylglycolic acid**. See Mandelic acid.

**Phenylglyoxylic acid**, brucine salt (HILDITCH), T., 235.

**Phenylglyoxylic acid**, *p*-amino-, acetyl derivative, and its derivatives and *p*-hydroxy-, preparation of (ALOY and RABAUT), A., i, 780.

*p*-hydroxy-, 3:4-dihydroxy-, and 3-nitro-4-hydroxy- (FRANCIS and NIERENSTEIN), A., i, 643.

**Phenylglyoxylic acid, *o*-nitro-, and its ethyl ester (HELLER, FRANTZ, and JÜRGENS), A., i, 864.**

**Phenylguanazole, salts of (COHN), A., i, 929.**

**Phenylguanidine hydrobromide, amino- (PELLIZZARI and LARIA-BOTTE), A., i, 337.**

**N-Phenylhelicinaldoxime and its hydrate (SCHEIBER and KLOPPE), A., i, 383.**

**$\delta$ -Phenylheptan- $\beta\zeta$ -dione (v. BAEYER and PICCARD), A., i, 901.**

**$\delta$ -Phenyl- $\Delta\gamma$ -hepten- $\beta\zeta$ -dione (v. BAEYER and PICCARD), A., i, 901.**

**$\zeta$ -Phenylheptoic acid and its ethyl ester and amide (v. BRAUN, DEUTSCH, and KRÜBER), A., i, 969.**

**$\zeta$ -Phenylheptonitrile (v. BRAUN, DEUTSCH, and KRÜBER), A., i, 969.**

**$\eta$ -Phenylheptyl alcohol and its acetate (v. BRAUN, DEUTSCH, and KRÜBER), A., i, 969.**

**$\eta$ -Phenylheptylamine and its derivatives (v. BRAUN, DEUTSCH, and KRÜBER), A., i, 969.**

**$\alpha$ -Phenylhexan- $\gamma$ -one (SENDERENS), A., i, 302.**

**$\epsilon$ -Phenylhexoic acid and its ethyl ester (v. BRAUN, DEUTSCH, and KRÜBER), A., i, 969.**

**$\epsilon$ -Phenylhexonitrile (v. BRAUN, DEUTSCH, and KRÜBER), A., i, 969.**

**$\zeta$ -Phenylhexyl alcohol and its acetate (v. BRAUN, DEUTSCH, and KRÜBER), A., i, 969.**

**$\zeta$ -Phenylhexylamine and its derivatives (v. BRAUN, DEUTSCH, and KRÜBER), A., i, 969.**

**Phenylhexylcarbinol and its derivatives (COLACICCHI), A., i, 199.**

**Phenylhomosalicylic acid, hydroxy- (CLEMMENSEN and HEITMAN), A., i, 543.**

**3-Phenylhydantoin, 2-thio- (WHEELER and BRAUTLECHT), A., i, 501.**

**1-Phenylhydantoin-4-acetamide, 2-thio- (BRAUTLECHT), A., i, 923.**

**1-Phenylhydantoin-4-acetic acid, 2-thio- (BRAUTLECHT), A., i, 923.**

**1-Phenylhydantoin-4-glyoxylic acid, 2-thio- (JOHNSON and BRAUTLECHT), A., i, 814.**

**1-Phenylhydantoin-4-propionic acid, 2-thio- (BRAUTLECHT), A., i, 923.**

**$\beta$ -Phenylhydrylic acid. See  $\beta$ -Phenylpropionic acid,  $\beta$ -hydroxy-.**

**Phenylhydrazide, tricyano- (PELLIZZARI), A., i, 338.**

**Phenylhydrazine, formation of acyl derivatives of, in aqueous solution (JAROSCHY), A., i, 157.**

**Phenylhydrazine, velocities of reaction of acetone and lutidone with (SCHÖTTLER), A., ii, 1079.**

**action of cyanogen halides on (PELLIZZARI), A., i, 338.**

**action of, on ethyl benzoylacetate (KÜHLING), A., i, 87.**

**compounds of organic salts of bivalent metals with (GROSSMANN and JÄGER), A., i, 944.**

**benzenesulphonate (SEYEWETZ and POIZAT), A., i, 360.**

**carbamide derivatives of (BUSCH and LIMPACH), A., i, 689.**

**Phenylhydrazine, 2:6-dinitro-, and its hydrochloride (BORSCHE and RANTSCHER), A., i, 331.**

**Phenylhydrazodicarbonamide (PELLIZZARI and ACCAME), A., i, 336.**

**Phenylhydrazone, dinitro-,  $C_{25}H_{22}O_9N_8$ , from  $p$ -aminobenzeneazosalicylic acid diazo-chloride (BÜLOW and HAAS), A., i, 339.**

**Phenylhydrazo- $\alpha$ - and  $\beta$ -thiodicarbonamide (PELLIZZARI, ACCAME, and LARIA-BOTTE), A., i, 336.**

**$\alpha$ -Phenylhydrohydrastinine (FREUND and LEDERER), A., i, 907.**

**1-Phenyl-4-*p*-hydroxybenzylhydantoin, 2-thio- (BRAUTLECHT), A., i, 923.**

**Phenyl hydroxy-*tert*-butyl ketone and its derivatives (BLAISE and HERMAN), A., i, 880.**

**Phenylhydroxylamine, nitroso-, metallic salts of (BAUDISCH), A., i, 125.**

**ammonium salt ("cupferron"), quantitative separation with (BAUDISCH), A., ii, 939; (FRESENIUS), A., ii, 336.**

**Phenyl-*m*-hydroxytolylethylene (STOERMER and DECKER), A., i, 665.**

**Phenyliminomalonic acid, methyl ester, reactions of, and its compound with ethyl alcohol (CURTISS and SPENCER), A., i, 540.**

**2-Phenylindazole, 3:5:7-trichloro- (FREUNDLER), A., i, 815.**

**5:7-dichloro-3-hydroxy-2-*p*-chloro- (FREUNDLER), A., i, 753.**

**2:5:7-trichloro-3-hydroxy- (FREUNDLER), A., i, 577.**

**2-Phenylindole, *o*-amino-, and its picrate (KLEGL and HAAS), A., i, 433.**

**Phenylindones, nitro-, photochemical reactions of (BAKUNIN and LANIS), A., i, 992.**

**Phenylketen, attempt to prepare (STAUDINGER and BEREZA), A., i, 307.**

**$\alpha$ -Phenyl-lactamide (STAUDINGER and RUŽIČKA), A., i, 463.**

**Phenyl-lactic acid**, *p*-hydroxy-, behaviour of, in the animal body (KOTAKE), A., ii, 59.

**Phenylmalonic acid**, 2:6-dinitro-, ethyl ester (BORSCHE and RANTSCHEFF), A., i, 332.

**Phenylmelamine**. See Cyanuric anilide.

**Phenylmercuric oxide**, *p*-chloro-4-chloro-2-nitro-, and *o*-nitro- (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 1056.

**Phenylmetasilicic acid**, anhydride of (KIPPING and HACKFORD), T., 144; P., 9.

**Phenylmethanesalicylic acid**. See Phenylhomosalicylic acid.

**1-Phenyl-4-p-methoxybenzylhydantoin**, 2-thio- (JOHNSON and BRAUTLECHT), A., i, 814.

**α-Phenyl-*p*-methoxyacrylic acid** (BODROUX), A., i, 783.

**Phenyl-*p*-methoxystyryl ketone dibromide**, elimination of bromine from (WILSON and BOON), P., 197.

**Phenyl-*p*-methoxy-*o*-, and *m*-tolyl-iodonium iodides** (WILLGERODT and SCHLOSS), A., i, 716.

**5-Phenyl-10-methylacridonium thiocyanate** (HANTZSCH), A., i, 675.

**β-Phenyl-*α*-methylacrylic acid**, crystallography of nitro-derivatives of (RANFALDI), A., i, 129.

ethyl ester (POSNER), A., i, 53.

**α-Phenylmethylaminoacetophenone** phenylhydrazone and semicarbazone (BUSCH and HEFELE), A., i, 584.

**Phenyl-*o*-methylaminostyryl ketoneanil** (KAUFMANN and PLÁ Y JANINI), A., i, 916.

**Phenylmethylammonium osmichloride** (GUTBIER and WALBINGER), A., i, 191.

platinibromide (GUTBIER, BAURIEDL, and OBERMAIER), A., i, 33.

**1-Phenyl-2-methylbenzimidazolone**, 4:7-dinitro-6-hydroxy-*p*-amino-, and *p*-acetylamino- (MELDOLA and KUNTZEN), T., 38.

**1-Phenyl-3-methyl-2-*isobutyl*-2-benzimidazolol**, 4:7-dinitro-6-hydroxy- (MELDOLA and KUNTZEN), T., 2044.

**1-Phenyl-3-methyl-2-*isobutyl*-6-benz-iminoazolone**, 4:7-dinitro- (MELDOLA and KUNTZEN), T., 2043.

**α-Phenyl-*α*-methylbutylmalonic acid** (INGLIS), T., 543.

**1-Phenyl-4-methyl-3-*tert*-butyl-5-pyr-azolone** (WAHLBERG), A., i, 708.

**Phenylmethylcarbinol**, and the brucine salt of the hydrogen succinate of (PICKARD and KENYON), T., 60.

**1-Phenyl-4-methylcoumarone** (STOERMER and DECKER), A., i, 665.

**2-Phenyl-4-methylcoumarone** and 1-bromo-, and 1-nitro- (STOERMER and DECKER), A., i, 665.

**2-Phenyl-5-methylcoumarone**, and 1-, and 4-bromo-, and 1-chloro- (STOERMER and DECKER), A., i, 665.

**Phenylmethyldiguanide** (COHN), A., i, 929.

**Phenylmethyldihydroacridine**, dibromo-cyano- (KAUFMANN, WIDMER, and ALBERTINI), A., i, 749.

**5-Phenyl-10-methyldihydroacridinol**, 3:7-dibromo-, ethyl ether (KAUFMANN, WIDMER, and ALBERTINI), A., i, 749.

**α-Phenyl-3:4-methylenedioxycinnamic acid** (BODROUX), A., i, 783.

**1-Phenyl-2-methyl-3-ethylbenzimin-azolium** hydroxide, 4:7-dinitro-6-hydroxy-, and its salts (MELDOLA and KUNTZEN), T., 1297.

**1-Phenyl-2-methyl-3-ethylbenzimin-azolol**, 4:7-dinitro-6-hydroxy- (MELDOLA and KUNTZEN), T., 1299.

**1-Phenyl-3-methyl-2-ethyl-6-benzimin-azolone**, 4:7-dinitro-6-hydroxy- (MELDOLA and KUNTZEN), T., 2042.

**1-Phenyl-2-methyl-3-ethylbenzimin-azolone**, 4:7-dinitro-6-hydroxy- (MELDOLA and KUNTZEN), T., 1298.

**1-Phenyl-3-methyl-2-ethyl-6-benzimin-azolone**, 4:7-dinitro- (MELDOLA and KUNTZEN), T., 2041.

**Phenylmethylethylphosphine oxide** (MEISENHEIMER and LICHTENSTADT), A., i, 344.

**1-Phenyl-3-methyl-2-ethylpyrazolone** (*homoantipyrine*), thio-derivatives of (V. KONEK-NORWALL), A., i, 505.

**Phenylmethylethylsilicol** (KIPPING and HACKFORD), T., 141; P., 9.

**3-Phenyl-1-methylcyclohexan-3-ol** and its phenylurethane (MAILHE and MURAT), A., i, 127.

**α-Phenyl-*ε*-methylhexan-γ-one** (SENDERENS), A., i, 303.

**3-Phenyl-1-methyl-cyclohexene** (MAILHE and MURAT), A., i, 127.

**Phenylmethylitaconic acid**, ethyl and methyl esters (STOBBE and ROSE), A., i, 375.

**Phenylmethylisoitaconic acid**, ethyl ester, preparation of (STOBBE and GADEMANN), A., i, 375.

**Phenylmethylketen** and its derivatives (STAUDINGER and RUŽIČKA), A., i, 462.

**Phenylmethylketenquinoline** (STAUDINGER and RUŽIČKA), A., i, 464.

**Phenyl methyl ketone**, acetylphenylhydrazone of (AUWERS, DANNEHL, and BOENNECKE), A., i, 172.

**Phenylmethylmalonyl chloride** (STAUDINGER and RUZICKA), A., i, 462.

**Phenylmethylisoxazolone** (HALLER and BAUER), A., i, 568.

**$\alpha$ -Phenyl- $\delta$ -methylpentan- $\gamma$ -one** and its semicarbazones (SENDERENS), A., i, 303.

**Phenyl  $\alpha$ -methylpropenyl ketone** and its *p*-nitrophenylhydrazone (BLAISE and HERMAN), A., i, 881.

**3-Phenyl-1-methyl-4-isopropylcyclohexene** (MURAT), A., i, 890.

***r*- and *l*-3-Phenyl-1-methyl-4-isopropyl-3-cyclohexanol** (MURAT), A., i, 890.

**1-Phenyl-3-methylpyrazole**, 4-amino-5-hydroxy-, and its derivatives (AUWERS, DANNEHL, and BOENNECKE), A., i, 170.

5-chloro-1-*o*-*m*- and *p*-nitro-, methiodides, and 5-chloro-4-nitro-1-*p*-nitro- (MICHAELIS, GRAFF, GESING, and BOE), A., i, 232.

**1-Phenyl-3-methylpyrazole-4-azobenzene-4'-*p*-azosalicylic acid**, 5-hydroxy-, and 5-hydroxy-1-*op*-dinitro- (BÜLOW and HAAS), A., i, 339, 340.

**1-Phenyl-3-methyl-5-pyrazolone**, *p*-chloro-, and its methiodide (MICHAELIS, THOMAS, and ISERT), A., i, 1042.

**1-Phenyl-5-methylpyridazin-6-one-3-carboxylic acid** (BLAISE and GAULT), A., i, 520.

**3-Phenyl-2-methyl-4-quinazolone**, *m*-, and *p*-amino-, 3-*p*-amino-6- and 7-acetylaminoo-, 3-*m*-amino-7-acetylaminoo-, 3-*p*-amino-7-amino-, and 3-*p*-amino-6-nitro- (BOGERT, GORTNER, and AMEND), A., i, 581.

**3-Phenyl-4-methyl-1:3:4-thiodiazolone-5-anil** (BUSCH and LIMPACH), A., i, 335.

**1-Phenyl-3-methyl-1:2:4-triazole** picrate (PELLIZZARI), A., i, 1036.

**1-Phenyl-5-methyl-1:2:4-triazole**, preparation of, and its salts (PELLIZZARI), A., i, 1035, 1036.

**1-Phenyl-2-methyl-1:3:4-triazole** and its salts (PELLIZZARI), A., i, 1036.

**$\beta$ -Phenyl- $\beta$ -methylvaleric acid** and its silver salt (INGLIS), T., 542; P., 46.

**Phenyl- $\beta$ -naphthacinchoninic acid**, *m*- and *p*-hydroxy-, and *mp*-dihydroxy- (PAULY, v. BUTTLAR, and LOCKEMANN), A., i, 786.

**N-Phenyl-*N'*-*p*-2- $\alpha$ -naphthaquinonyl-aminophenylcarbamide**, *p*-amino- (PUMMERER and BRASS), A., i, 655.

**2-Phenyl- $\alpha$ -naphthiminazole-7-sulphonic acid**, 4-hydroxy-2-*m*-amino-, and its sodium salt (CASSELLA & CO.), A., i, 682.

**$\alpha$ -Phenyl- $\beta$ -*a*-naphthylcinnamonnitrile** (BODROUX), A., i, 545.

**1-Phenyl-2-naphthyl-1:2-dihydro-*iso*-benzofuran**, 2-hydroxy- (GUYOT and VALLETTE), A., i, 654.

**Phenyl-1:8-naphthylene diamine**, 2':4'-*d*-nitro-, condensation of, with ethyl chlorocarbonate (SACHS and FORSTER), A., i, 754.

**Phenylnaphthylmethylidimethylammonium chloride** (BADISCHE ANILIN- & SODA-FABRIK), A., i, 627.

**Phenyl- $\beta$ -naphthylphosphoramido** (KIPPING and CHALLENGER), T., 635.

**Phenyl- $\beta$ -naphthylphosphor-*p*-toluidide** (KIPPING and CHALLENGER), T., 636.

**Phenyl- $\beta$ -naphthylphosphoryl chloride** (KIPPING and CHALLENGER), T., 629.

**Phenyl  $\alpha$ - and  $\beta$ -naphthyl and *p*-tolyl sulphides**, *p*-bromo- (BOURGEOIS and FOUASSIN), A., i, 964.

**4-Phenyl-1:8-naphthyrid-2-one** and its platinichloride (PALAZZO and TAMBURINI), A., i, 327.

**1- and 3-Phenyl-4-*p*-nitrobenzylidenehydantoin**, 2-thio- (WHEELER and BRAUTLECHT), A., i, 501.

**Phenyl-2-*p*-nitrobenzyl-1:4:6-pyronone**, 3:5-*di*-*p*-nitro- (WEDERKIND, HÄUSSERMANN, WEISSWANGE, and MILLER), A., i, 220.

**Phenylnitromethane**. See Toluene, *o*-nitro.

**Phenyl-4-nitro- $\alpha$ -naphthylloxamide**, *o*- and *p*-nitro- (SUIDA), A., i, 366.

**Phenylosazone**, *p*-nitro-,  $C_{15}H_{12}O_6N_6$ , from cellulose nitrate (BERL and FODOR), A., i, 265.

**Phenylloxamic acid**, *o*-hydroxy-, salt of, with *o*-aminophenol (SUIDA), A., i, 284.

**3-Phenylisooxazolone**, azo-derivatives of (MEYER), A., i, 341.

**$\alpha$ -Phenylpentan- $\gamma$ -one** and its semicarbazone (SENDERENS), A., i, 302.

**$\delta$ -Phenyl- $\Delta^a$ -pentenoic acid**, conversion of, into the  $\Delta\gamma$ -isomeride (BOUGAULT), A., i, 202.

**1-Phenylperimidine**, *op*-dinitro-, and its picrate (SACHS and FORSTER), A., i, 754.

**1-Phenylperimidine-2-benzoic acid**, *op*-diamino-, and its picrate and *op*-dinitro- (SACHS and FORSTER), A., i, 755.

**$\beta$ -Phenyl-4-phenanthrylcarbamide** (SCHMIDT and HEINLE), A., i, 626.

**10-Phenylphenazonium**, 1- and 3-amino-, their salts and acetyl derivatives (KEHRMANN and MASSLENIKOFF), A., i, 927.

**2:6-diamino-**, chloride (KEHRMANN and RIERA Y PUNTI), A., i, 926.

**11-Phenylphenonaphthafuorone** (POPE and HOWARD), T., 549.

**Phenyl phenoxyethyl ketone,  $\alpha$ -amino-, acetyl derivative** (KUNCKELL), A., i, 990.

**3-Phenyl-5-phenoxyethylisooxazole** (v. WALTHER and LITTER), A., i, 237.

**4-Phenyl-3-phenoxyethylisooxazolone, and 5-imino-4-*p*-chloro-** (v. WALTHER and HERSCHEL), A., i, 238.

**3-Phenyl-5-phenoxyethylpyrazole** (v. WALTHER and LITTER), A., i, 237.

**Phenyl  $\alpha$ -phenylenediamine, 2:4-dinitro, and its hydrochloride** (BORSCHE and RANTSCHEFF), A., i, 332.

**Phenyl-*p*-phenylenediamine, 4'-bromo-, and 4-chloro-, and their salts** (BAMBERGER and HAM), A., i, 685.

**$\alpha$ -Phenyl- $\beta$ ( $\alpha$ )-phenylethyl- $\beta$ -ethyl-hydrazine and its derivatives** (WIELAND and FRESSEL), A., i, 495.

**Phenyl- $\beta$ -phenylethylmethylamine and its picrate and platinichloride** (v. BRAUN), A., i, 35.

**Phenylphosphordi-*p*-toluidide** (KIPPING and CHALLENGER), T., 636.

**Phenylphthalimides, isomeric** (KUHARA and KOMATSU), A., i, 205.

**Phenylpiperidine, 1-*di*-*o*-nitro-** (BORSCHE and RANTSCHEFF), A., i, 330.

**$\delta$ -Phenyl- $\alpha$ -piperonylfulgenic acid** (STOBBE, KAUTZSCH, and BADENHAUSEN), A., i, 376.

**$\delta$ -Phenyl- $\alpha$ -piperonylfulgide** (STOBBE, KAUTZSCH, and BADENHAUSEN), A., i, 377.

**1-Phenyl-4-piperonylhydantoin, 2-thio-** (JOHNSON and BRAUTLECHT), A., i, 814.

**1-Phenyl-4-piperonylidenehydantoin, 2-thio-** (WHEELER and BRAUTLECHT), A., i, 501.

**Phenylpropionic acid,  $\alpha$ -methylhexylcarbonyl ester of** (HILDITCH), T., 222; P., 6.

***dl*- and *l*- $\beta$ -octyl esters of** (PICKARD and KENYON), T., 67.

**Phenylpropionamide,  $\alpha$ -cyano- $\beta$ -hydroxy-** (SCLAVI), A., i, 398.

**$\alpha$ -Phenylpropionanilide** (STAUDINGER and RUŽIČKA), A., i, 464.

**$\beta$ -Phenylpropionic acid, *d*-methylhexylcarbonyl ester of** (HILDITCH), T., 222; P., 6.

***dl*- and *l*- $\beta$ -octyl esters of** (PICKARD and KENYON), T., 66.

**$\beta$ -Phenylpropionic acid, *dl*- $\alpha$ -amino-3:4-dihydroxy-, benzoyl derivative** (FUNK), T., 556.

**$\beta$ -hydroxy- ( $\beta$ -phenylhydracrylic acid), ether derivatives of** (SCHRAUTH, SCHOELLER, and STRUENSEE), A., i, 641.

**$\beta$ -Phenylpropionic acid,  $\beta$ -*p*-hydroxy-, ethyl ester, and its amide** (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 629.

***d*- $\beta$ -Phenylpropionic acid,  $\alpha$ -*p*-dihydroxy-** (EHRLICH and JACOBSEN), A., ii, 521.

***d*- and *l*-Phenylpropionic acids,  $\alpha$ -hydroxy-, ethyl esters** (MCKENZIE and BARROW), T., 1921.

**$\alpha$ -Phenylpropionyl chloride,  $\alpha$  and  $\beta$ -chloro-, and  $\alpha\beta$ -dichloro-, and their derivatives** (STAUDINGER and RUŽIČKA), A., i, 463.

**Phenylpropylcarbonyl ether** (ODDO and DEL ROSSO), A., i, 443.

**$\gamma$ -Phenylpropyldiethylamine and its picrate and platinichloride** (v. BRAUN), A., i, 36.

**$\gamma$ -Phenylpropyldipropylamine and its picrate and platinichloride** (v. BRAUN), A., i, 36.

**$\gamma$ -Phenyl- $\alpha$ -isopropylene paraconic acid, *p*-chloro-** (STOBBE and WAHL), A., i, 374.

**$\gamma$ -Phenylpropylethylamine** (v. BRAUN), A., i, 36.

**$\gamma$ -Phenylpropylethylcyanamide** (v. BRAUN), A., i, 36.

**$\alpha$ -Phenyl- $\alpha$ -cyclopropylethylene** (KIJNER), A., i, 990.

**1-Phenyl-4-isopropylhydantoin, 2-thio-** (BRAUTLECHT), A., i, 922.

**Phenyl isopropyl ketone, preparation, properties, and derivatives of** (LAWORTH and STEELE), T., 1882; P., 239.

**$\gamma$ -Phenylpropylmethylamine and its derivatives** (v. BRAUN), A., i, 36.

**Phenylcyclopropylmethylcarbinol** (KIJNER), A., i, 989.

**$\gamma$ -Phenylpropylmethylcyanamide** (v. BRAUN), A., i, 35.

**$\gamma$ -Phenylpropylpropylamine and its picrate and its platinichloride** (v. BRAUN), A., i, 36.

**$\gamma$ -Phenylpropylpropylecyanamide** (v. BRAUN), A., i, 36.

**$\gamma$ -Phenylpropyltrimethylammonium bromide and its platinichloride** (v. BRAUN), A., i, 35.

**Phenylisopropyltrimethylammonium, *p*-hydroxy-, and dihydroxy-, iodides** (ROSENmund), A., i, 34.

**1-Phenylpyrazole, 3:5-dibromo-, 3:4:5-tribromo-, 5-chloro-, 5-chloro-4-bromo-, 4:5-dichloro-, 3:5-dichloro-4-bromo-, 3:4:5-trichloro-, and their salts** (MICHAELIS and WALTER), A., i, 1040.

**1-Phenylpyrazole-3-carboxylic acid, 5-chloro-, 4:5-dichloro-, and 5-chloro-4-bromo-, and their salts and derivatives** (MICHAELIS and WALTER), A., i, 1039.

1-**Phenylpyrazole-3:4-dicarboxylic acid** (BAUER and DIETERLE), A., i, 922.

1-**Phenylpyrazole-3-glyoxylic acid**, 5-hydroxy-, ethyl ester, arylhydrazones of (BÜLOW and GÖLLER), A., i, 1043.

5-**Phenyl-3-pyrazolidone**, 1-nitroso-, and its salts (MUCKERMANN), A., i, 682.

1-**Phenyl-6-pyridazinone-3-carboxylic acid** (WISLICENUS and WALDMÜLLER), A., i, 603.

**Phenylpyridinium**, *m*-chloro-, and 3-chloro-2:4:6-tribromo-, salts of (KÖNIG), A., i, 485.

chloride, 2:6-dinitro- (BORSCHE and RANTSCHOFF), A., i, 331.

**Phenylpyruvic acid**, brucine salt (HILDITCH), T., 235.

**Phenylpyruvic acid**, *p*-hydroxy-, behaviour of, in the animal body (KOTAKE), A., ii, 59.

2-**Phenylquinoline**, salts of a monosulphonic acid of (MURMANN), A., i, 157.

methochloride (KAUFMANN and PLÄY JANINI), A., i, 916.

**Phenylquinoxanthenol**, *p*-bromo-, bromide hydrobromide (CONE and WEST), A., i, 806.

1-**Phenyl-4-salicylidenehydantoin**, 2-thio- (WHEELER and BRAUTLECHT), A., i, 501.

**Phenylstibinic acid**, *m*-nitro- (MORGAN and MICKLETHWAIT), T., 2295; P., 274.

3-**Phenyl-5-styryldihydroisoxazole** and *dibromo*- (CIUSA and TERNI), A., i, 918.

δ-**Phenyl-*α*-styrylfulgide** (STOBBE, BENARY, and SEYDEL), A., i, 380.

3-**Phenyl-5-styrylisoxazole** (CIUSA and TERNI), A., i, 918.

1-**Phenyl-3-β-styrylvinyl-5-anisylpyrazoline** (BAUER and DIETERLE), A., i, 921.

1-**Phenyl-3-β-styrylvinyl-5-furylpyrazoline** (BAUER and DIETERLE), A., i, 922.

**Phenylsulphohydrazide**, *di-o*-nitro- (CLAASZ), A., i, 695.

α-**Phenyltarconine** (FREUND and LEDERER), A., i, 910.

*N*-**Phenyltetra-acetylhelicinaldoxime** (SCHEIBER and KLOPPE), A., i, 383.

**Phenyltetrahydroberberine** (GADAMER and STEINBRECHER), A., i, 153.

1-**Phenyl-3:4:5-tetramethyl-1:2:7-benztriazole** (BÜLOW and HAAS), A., i, 88.

4-**Phenyltetraphenylethylene**, and *tetra*-nitro- (NORRIS, THOMAS, and BROWN), A., i, 32.

**Phenylthiocarbamic acid**, *n*-butyl ester (DOURIS), A., i, 950.

3-**Phenyl-1:3:4-thiodiazole-5-one-2-anil** (BUSCH and LIMPACH), A., i, 334.

**Phenylthiobenzoylbenzoic acid** and its ammonium salt (SCHOLL and SEER), A., i, 558.

**Phenylthiophenylidiphenetyl sulphonium** platinichloride (HILDITCH), T., 1096.

1-**Phenyl-5-thiourazole** (PELLIZZARI and LARIA-BOTTE), A., i, 336.

10-**Phenyl-9-tolylanthracene** (GUYOT and VALLETTE), A., i, 653.

2-**Phenyl-1-tolylisobenzofuran** (GUYOT and VALLETTE), A., i, 652.

α-**Phenyl-β-*p*-tolylcinnamoneitrile** (BODROUX), A., i, 545.

10-**Phenyl-9-tolylidihydroanthracene**, 9:10-dihydroxy- (GUYOT and HALLER), A., i, 653.

2-**Phenyl-1-tolyl-1:2-dihydroisobenzofuran**, and 2-hydroxy- (GUYOT and VALLETTE), A., i, 652.

4-**Phenyl-1-*p*-tolyl-2:6-dimethylpyridinium** perchlorate (v. BAYER and PICCARD), A., i, 901.

4-**Phenyl-3-*p*-tolyl-6-methyldihydro-pyrazofurazan** (MICHAELIS and RISSE), A., i, 1089.

**Phenyl-*p*-tolylmethyl-ψ-thiocarbamide** (ARNDT), A., i, 919.

**Phenyl-*p*-tolyl-*p*-phenylene disulphide** (BOURGEOIS and FOUASSIN), A., i, 964.

**Phenyltolylphthalazine** (GUYOT and VALLETTE), A., i, 652.

**Phenyl-*p*-tolyl-ψ-thiocarbamide** and its salts and benzoyl derivative (ARNDT), A., i, 919.

2-**Phenyl-1:3:5-triazine**, 4:6-*diamino*-, and its salts (OSTROGOVICH), A., i, 333.

*s*-**Phenyl-β-triazoethylcarbamide** (FORSTER and NEWMAN), T., 1281; P., 154.

*s*-**Phenyl-β-triazoethylthiocarbamide** (FORSTER and NEWMAN), T., 1281; P., 154.

1-**Phenyl 1:2:4-triazole**, picrate and nitrate (PELLIZZARI), A., i, 1036.

2-**Phenyl-1:3:4-triazole**, salts of (PELLIZZARI), A., i, 1035.

α-**Phenyltricarballylic acid** (WEGSCHEIDER), A., i, 458.

8-**Phenyl-1:3:6-trimethylallantoin** (BILTZ and KREBS), A., i, 242.

1-**Phenyl-3:4:6-trimethyl-1:2:7-benztriazole** and its salts (BÜLOW and HAAS), A., i, 88.

1-**Phenyl-3:5:6-trimethyl-1:2:7-benztriazole**, 4-hydroxy-, and its aurichloride (BÜLOW and HAAS), A., i, 89.

**3-Phenyl-4:5:6-trimethyl-1:2-dihydro-pyridone**, 3-hydroxy- (THOLE and THORPE), T., 2241.

**α-Phenyl-αδ-trimethylfulgenic acid** (STOBBE and GADEMANN), A., i, 375.

**α-Phenyl-αδ-trimethylallofulgenic acid** (STOBBE and GADEMANN), A., i, 375.

**α- and δ-Phenyl-αδ-trimethylfulgide** (STOBBE and GADEMANN), A., i, 375.

**s-Phenyltriphenylmethylcarbamide** (v. MEYER and FISCHER), A., i, 120.

**Phenyl triphenylmethyl sulphide** (v. MEYER and FISCHER), A., i, 121.

**1-Phenylurazole**, 5-imino- (PELLIZZARI and LARIA-BOTTE), A., i, 337.

**δ-Phenylvaleric acid and its methyl ester** (BORSCHE), A., i, 880.

**9-Phenylxanthen**, 3:6-dichloro-9-cyano- (POPE and HOWARD), T., 550.

**9-Phenylxanthen-9-carboxylic acid**, 3:6-dichloro-, and its ethyl ester (POPE and HOWARD), T., 550.

**Phenylxanthenol**, *p*-bromo-, salts of (CONE and WEST), A., i, 806.

**9-Phenylxanthen-9-ol**, 2-hydroxy-, anhydride of (DECKER and KAUFMANN), A., i, 808.

**9-Phenylxanthonium chloride**, 3:6-dichloro- (POPE and HOWARD), T., 550; P., 52.

**9-Phenylxanthyl ethyl and methyl ethers**, 3:6-dichloro- (POPE and HOWARD), T., 551.

**Phloretinylglycuronic acid** (SCHÜLLER), A., ii, 814.

**Phloridzin**, influence of, on glycogen formation in the liver (SCHÖNDORFF and SUCKROW), A., ii, 306.

**Phloridzin diabetes**. See under Diabetes.

**Phloridzinglycuronic acid** (SCHÜLLER), A., ii, 814.

**Phloroglucinol**, compound of, with *p*-benzoquinone (SIEGMUND), A., i, 654.

**Phloroglucinol**, dibromo-, and its triacetate (v. HEMMELMAYR), A., i, 984.

**Phloroglucinoldicarboxylic acid**, ethyl ester, by-products of the preparation of (LEUCHS and SIMION), A., i, 646.

**Phonolite**, use of, as a potassium manure (PFEIFFER, BLANCK, and FLÜGEL), A., ii, 764.

**Phonopyrrole** and its picrate (PILOTY, QUITMANN, and EPPINGER), A., i, 92.

**Phonopyrrolecarboxylic acid** (PILOTY, QUITMANN, and EPPINGER), A., i, 92.

**Phosphates**. See under Phosphorus.

**Phosphatese**, action of (v. EULER and KULLBERG), A., i, 1051.

**Phosphorescence**, spectrum of, of organic compounds at low temperatures (DE KOWALSKI and DE DZIERZICKI), A., ii, 3.

**Phosphorescence**, relation between, and absorption (BRÜNINGHAUS), A., ii, 562.

progressive, influence of substituent groups on (DE KOWALSKI and DE DZIERZICKI), A., ii, 84.

ultra-red and ultra-violet, of alkaline-earth sulphides (PAULI), A., ii, 351.

of organic compounds on spontaneous oxidation (DELÉPINE), A., i, 768.

**Phosphoric acid**. See under Phosphorus.

**Phosphorite minerals**, French, composition of (SCHALLER), A., ii, 1102.

**Phosphorus**, atomic weight of (TER-GAZARIAN), A., ii, 201.

ionisation produced by (BLANC), A., ii, 455.

oxidation of (CENTNERSZWER), A., ii, 201.

lecture experiments on the luminosity of (MARINO and PORLEZZA), A., ii, 594.

preparation of optically active compounds of (EPHRAIM), A., i, 284.

compounds of, with sulphur (MAI), A., ii, 484, 719.

white, purification of, and its conversion into allotropic modifications (SMITS and DE LEEUW), A., ii, 263.

metabolism. See under Metabolism.

poisoning, changes in the liver in (SLOWTZOFF), A., ii, 315; (WOHLGEMUTH), A., ii, 517.

metabolism in (FRANK and ISAAC), A., ii, 315.

inefficiency of the suprarenals in cases of (NEUBAUER and PORGES), A., ii, 637.

compounds from seeds (VORBRODT), A., i, 263.

variation in the amounts of, in seeds (LEWONIEWSKI), A., ii, 641.

**Phosphorus pentachloride**, relation between critical temperature, boiling point and expansion coefficient of (PRIDEAUX), A., ii, 368.

action of, on optically active hydroxy-acids and esters (MCKENZIE and BARROW), T., 1910; P., 232.

**Phosphoric oxide**, action of water on (BALAREFF), A., ii, 107.

reduction of, in the presence of nickel (NEOGI and ADHICARY), A., ii, 107.

**Phosphoric acid**, action of, with organic acids (RAIKOFF and TISCHKOFF), A., i, 445.

action of, on resistant alloys and metals (WUNDER and JEANNERET), A., ii, 719.

**Phosphoric acid**, behaviour of uranyl salts of, with indicators (STARKENSTEIN), A., ii, 537.  
 absorption of, by plants (PFEIFFER and BLANCK), A., ii, 764.  
 in soils (POUGET and CHOUCHAK), A., ii, 145.  
 fixation of, in soils (PETIT), A., ii, 649.  
 influence of various salts on the assimilation of (PRIANISCHNIKOFF), A., ii, 432.  
 amino-, phenyl barium and phenyl cinchonine salts (EPHRAIM), A., i, 285.  
 organic salts of (KIPPING and CHALLENGER), T., 630; P., 66.  
 resolution of asymmetrical derivatives of (KIPPING and CHALLENGER), T., 626; P., 66.  
 and dichloro-, chlorotolyl esters of (RASCHIG), A., i, 636.  
 titration of (WAGENAAR), A., ii, 931.  
 estimation of (KRASSER), A., ii, 333; (BANG), A., ii, 664; (STRECKER and SCHIFFER), A., ii, 768.  
 estimation of, colorimetrically (POUGET and CHOUCHAK), A., ii, 823.  
 estimation of, gravimetrically (V. LORENZ), A., ii, 1028.  
 estimation of, volumetrically (WUYTS), A., ii, 656; (ROSIN), A., ii, 768.  
 estimation of, as magnesium ammonium phosphate (JÖRGENSEN), A., ii, 437, 536.  
 estimation of, in the presence of vanadic acid (EDGAR), A., ii, 71.  
 estimation of, in superphosphates and bone-meals (ROMÁNSKI), A., ii, 227.  
 estimation of, in soils (KASERER and GREITSENEGGER), A., ii, 152.  
 estimation of, colorimetrically, in soils (PASSERINI), A., ii, 535.  
 estimation of, in steel (HINRICHSEN and DIECKMANN), A., ii, 156.  
**Phosphates**, influence of, on glycolysis (LÖB), A., ii, 504.  
 organic (BOORNSMA), A., ii, 427.  
 transformation of, in soils (STOKLASA), A., ii, 429.  
 effect of soluble salts on the adsorption of, by soils (PATTEN), A., ii, 1128.  
 reaction of, with luteocobaltic chloride (SESE), A., ii, 537.  
 analysis of, and conversion of, into superphosphates (HARDY and VANDORMAEL), A., ii, 333.

**Phosphoric acid** :—  
**Phosphates**, estimation of (HUNDESHAGEN), A., ii, 931.  
 estimation of, refractometrically, in urine (AMANN), A., ii, 536.  
**Phosphoric acids**, ortho-, meta-, and pyro- (HOLT and MYERS), T., 384; P., 21.  
 ionic physiological action of the (STARKENSTEIN), A., ii, 513.  
 esters and amides of (LANGHELD), A., i, 705.  
**Orthophosphoric acid**, dissociation constants of (PRIDEAUX), T., 1224; P., 121.  
 condensation of acetone in the presence of (NEOGI), T., 1249; P., 71.  
**Metaphosphoric acid**, heat changes during the hydration of (BALAREFF), A., ii, 798.  
 velocity of hydration of (BALAREFF), A., ii, 974.  
 ethyl ester, compounds of, with alcohols and amines (LANGHELD), A., i, 706.  
**Metaphosphates**, alkali and metallo-alkali, fusion of mixtures of (VAN KLOOSTER), A., ii, 110.  
**Pyrophosphoric acid**, rate of hydration of (ABBOTT), A., ii, 108.  
**Phosphorous acid**, kinetics of the reduction of mercuric chloride by (GARNER, FOGLSONG, and WILSON), A., ii, 973.  
 o-tolyl ester (RASCHIG), A., i, 636.  
**Hypophosphites**, estimation of (RUPP and KROLL), A., ii, 1133.  
**Thiophosphoric acid**,  $\alpha$ -, and  $\beta$ - trimethyl esters and their derivatives (EMMETT and JONES), T., 713; P., 72.  
 amino-, diphenyl ester, and its sodium and cinchonine salts (EPHRAIM), A., i, 285.  
**Phosphoryl** chloride as a cryoscopic solvent (ODDO and MANNESIER), A., ii, 1060.  
 reduction of, by hydrogen (BESSON and FOURNIER), A., ii, 37.  
 interaction of, with metallic oxides (BASSETT and TAYLOR), T., 1402; P., 155.  
**Phosphorus organic compounds** (ARBUSOFF), A., i, 100.  
 optically active (MEISENHEIMER and LICHTENSTADT), A., i, 344.  
**Phosphorus**, detection of, in cases of poisoning (PEDRAZZINI), A., ii, 438.  
 electroscopic detection of, in the organism (SCHMIDT), A., ii, 815.

**Phosphorus**, estimation of, volumetrically (BOWSER), A., ii, 437.  
estimation of, in iron, without separation of silicon (MÜLLER), A., ii, 1132.  
estimation of, in meat (GRINDLEY and ROSS), A., ii, 332.  
estimation of, in milk (BORDAS and TOULAIN), A., ii, 438, 535; (FLEURENT and LÉVI), A., ii, 535.  
estimation of, in oils (FREY), A., ii, 535.  
estimation of, in tissues (WOLF and ÖSTERBERG), A., ii, 67.  
estimation of, in wines (DORMANE), A., ii, 931.

**Phosphoryl chloride.** See under Phosphorus.

**Phosphotungstic acid**, precipitation of (WECHSLER), A., ii, 828.

**PHOTOCHEMISTRY :—**

**Light**, chemical action of (CIAMICIAN and SILBER), A., i, 513, 647, 650; (INGHILLERI), A., i, 709.  
classification of reactions influenced by (PLOTNIKOFF), A., ii, 834.  
absorption of, by inorganic salts (HOUSTOUN : HOUSTOUN and BROWN), A., ii, 785; (HOUSTOUN and ANDERSON), A., ii, 786.  
absorption of, by mixtures of substances (RUFF), A., ii, 237.  
action of, on aldehydes and phenanthraquinone (KLINGER and ROERDANSZ), A., i, 633.  
dispersion of, by vapours of the alkali metals (BEVAN), A., ii, 349.  
action of, on chlorophyll (DANGEARD), A., ii, 86.  
development of colours in fibres by (BAUDISCH), A., ii, 952.  
refraction and dispersion of, in gases (GRUSCHKE), A., ii, 349; (JULIUS and VAN DER PLAATS), A., ii, 449.  
ionisation of gases by (CANNEGIERER), A., ii, 455.  
influence of, on the composition of the sugar-beet (STROHMER, BRIEM, and FALLADA), A., ii, 763.  
effect of, on sulphur insulation (BATES), A., ii, 836.  
ultra-violet, intensity of, from quartz-mercury lamps (HENRI), A., ii, 833.  
influence of, on chemical reactions (POUGNET), A., ii, 85.  
measurements of photochemical action in (SCHALL), A., ii, 835.  
conversion of stable stereoisomericides into labile modifications by (SPOERMER, FRIDERICI, BRAÜTIGAM, and NECKEL), A., i, 295.

**PHOTOCHEMISTRY :—**

**Light**, ultra-violet, formation of oxidising agents in air by means of (CHLOPIN), A., ii, 717.  
action of, on various substances (GUNTZ and MINGUIN), A., ii, 241.  
action of, on carbohydrates (JOLLES : BIERRY, HENRI, and RANC : V. EULER and OHLSÉN), A., i, 524.  
action of, on chlorophyll (BIERRY and LARGUIER DES BANCELS), A., i, 735.  
action of, on diastases (AGULHON), A., ii, 243.  
action of, on enzymes (CHAUCHARD and MAZOUË), A., i, 758.  
ionisation of gases by (SACHS), A., ii, 246.  
nitration by (BERTHELOT and GAUDECHON), A., ii, 240.  
influence of, on organic acids (BERTHELOT and GAUDECHON), A., ii, 170.  
photolysis of organic compounds by (BERTHELOT and GAUDECHON), A., ii, 86, 835.  
action of, on organic compounds and metallic salts (BERTHELOT and GAUDECHON), A., ii, 242.  
action of, on plants (POUGNET), A., ii, 528.  
effects of, on serum (SCOTT), A., ii, 997.  
decomposition of water by (TIAN), A., ii, 452, 564.

**Sunlight**, organic syntheses by means of (PATERNÒ and CHIEFFI), A., i, 65; (PATERNÒ and FORLI-FORTI), A., i, 66.

**Photochemical** investigation of opalescence near the critical temperature (KEESOM), A., ii, 787.  
reactions, grouping of (WEIGERT), A., ii, 834.  
in aqueous solution (BENRATH), A., ii, 681.  
in gases, energy changes in (WARBURG), A., ii, 834.  
in laboratory work (GEBHARD), A., ii, 66.  
studies (PLOTNIKOFF), A., ii, 4, 452, 834.  
synthesis of carbohydrates (STOKLASA and ZDOBNIČKÝ), A., i, 178; (LÖB), A., i, 263.  
**Photokinetics** of bromine substitution (BRUNER and CZARNECKI), A., ii, 241; (BRUNER and LAHOCIŃSKI), A., ii, 242.

## PHOTOCHEMISTRY:—

**Photographic images**, development of, from silver salts (LUMIÈRE; LUMIÈRE and SEYEWETZ), A., ii, 353.

**Optical activity** and chemical constitution (INGLIS), T., 538; P., 46. influence of double linking on (FRANKLAND and O'SULLIVAN), T., 2325; P., 319. influence of molecular symmetry on, of aromatic position-isomerides (HILDITCH), A., i, 892. relation of position isomerism to (COHEN), T., 1058; P., 123. effect of contiguous unsaturated groups on (HILDITCH), T., 224; P., 6.

dispersion (HAVELOCK), A., ii, 165.

inversion, Walden's (MCKENZIE and BARROW), T., 1910; P., 232; (FISCHER), A., i, 418; (FISCHER and SCHEIBLER), A., i, 527; (SCHEIBLER and WHEELER), A., i, 835.

sensitisation (WINTHER), A., ii, 239.

**Optically active compounds**, influence of the solvent on the rotatory power of (LANDAU), A., ii, 450.

**Radiation**, homogeneous corpuscular (SADLER), A., ii, 839.

**Rays**, method of making visible the paths of, through a gas (WILSON), A., ii, 565.

long-waved heat, isolation of, by quartz (RUBENS and WOOD), A., ii, 93.

**$\alpha$ -Rays**, ionisation of gases by (MOULIN), A., ii, 171.

**$\alpha$ -Particles**, distribution of (SNOW), A., ii, 682.

range of (GEIGER and NUTTALL), A., ii, 953.

**$\beta$ -Rays** from radium and thorium (v. BAEYER, HAHN, and MEITNER), A., ii, 567.

production of  $\gamma$ -rays from (GRAY), A., ii, 355.

**$\beta$ -Particles**, ionisation produced by (GEIGER and KOVARIK), A., ii, 954.

secondary (SAPOSHNIKOFF), A., ii, 840.

variation of ionisation with velocity of the (WILSON), A., ii, 566.

**$\alpha$ - and  $\beta$ -Particles**, scattering of, by matter (RUTHERFORD), A., ii, 453.

**$\gamma$ -Rays** of thorium and actinium (RUSSELL and SODDY), A., ii, 88.

secondary, produced by  $\beta$ -rays (GRAY), A., ii, 355.

## PHOTOCHEMISTRY:—

**$\alpha$ -,  $\beta$ -, and  $\gamma$ -Rays**, influence of, on coloured solids (DOELTER and SIRK), A., ii, 171.

**$\delta$ -Rays** (CAMPBELL), A., ii, 841.

**Canal rays** (KOENIGSBERGER and KILCHLING), A., ii, 86; (THOMSON), A., ii, 457.

in hydrogen, Doppler spectrum of (GEHRCKE and REICHENHEIM), A., ii, 166; (STARK), A., ii, 568.

chemical action of (PERMAN), T., 833; P., 94; (KOHLSCHEUTTER), A., ii, 683.

chemical action of, of various elements (v. DECHEND and HAMMER), A., ii, 454.

ionisation of gases by (SEELIGER), A., ii, 958.

**Cathode rays**, chemical action induced by (PERMAN), T., 833; P., 94.

absorption and radiation of (BUTAVAND), A., ii, 1046.

action of, on minerals (POCHINETTO), A., ii, 357.

coloration of minerals by (DOELTER), A., ii, 569.

**Röntgen rays**, production of characteristic (WHIDDINGTON), A., ii, 568.

spectra of (BARKLA), A., ii, 839.

ionisation of heavy gases by (BEATTY), A., ii, 245.

homogeneous secondary (CHAPMAN), A., ii, 357.

intensity of (CHAPMAN and GUEST), A., ii, 568.

energy transformations of (BRAGG and PORTER), A., ii, 683.

**Radioactive content** of the tufa of Fiuggi (PORLEZZA and NORZI), A., ii, 846.

**Radioactive elements**, fixation of (SZILARD), A., ii, 172.

decomposition of, at ordinary temperature (MARTIN), A., ii, 453.

**Radioactive emanations**, transformation and nomenclature of (RUTHERFORD and GEIGER), A., ii, 955.

**Radioactive equilibrium** (MITCHELL), A., ii, 87.

in Vesuvian cotunnite (ROSSI), A., ii, 174.

**Radioactive minerals**, ratio between uranium and radium in (GLEDITSCH), A., ii, 845.

from the Caucasus (SOKOLOFF), A., ii, 498.

from Madagascar (LACROIX), A., ii, 295, 296.

**Radioactive products** of short life (MOSELEY and FAJANS), A., ii, 956.

## PHOTOCHEMISTRY :—

**Radioactive recoil** (MAKOWER and RUSS), A., ii, 172.

**Radioactive rocks and minerals** (GOCKEL), A., ii, 174.

**Radioactive substances**, concentration and isolation of (EBLER and FELLNER), A., ii, 957. variation in the activity of, with time (CURIE), A., ii, 1047. heat produced by (DUANE), A., ii, 358.

**Radioactivity**, apparatus for measuring (v. WESZELSKY), A., ii, 453; (SZILARD), A., ii, 565. units of measurement of (JABOIN), A., ii, 8.

as a property of matter (WULF), A., ii, 709.

influence of temperature on induced (SARASIN and TOMMASINA), A., ii, 244.

local atmospheric, probable influence of soil on (SANDERSON), A., ii, 846.

and enzyme action (v. KÖRÖSY), A., ii, 9.

of gases from the sulfoni of Larderello, concentration of (PORLEZZA and NORZI), A., ii, 842.

of Leinster granite (FLETCHER), A., ii, 89.

of igneous rocks from Antarctic regions (FLETCHER), A., ii, 570.

of mineral springs. See under Water.

**Refraction** constants, theory of (WIENER), A., ii, 557.

**Molecular refraction** of organic compounds, influence of three- and four-membered carbon rings on (ÖSTLING), P., 315.

**Refractive index** of binary mixtures (MAZZUCHELLI), A., ii, 781.

of halogen salts of the alkali metals (BAXTER, BOYLSTON, MUELLER, BLACK, and GOODE), A., ii, 557.

**Refractivity**, relation between density and magnetic rotation of solutions (SCHWERS), A., ii, 92.

**Atomic refractivity** (EISENLOHR), A., ii, 81.

**Electrical double refraction** of organic compounds (LEISER), A., ii, 563.

**Magnetic double refraction** of the rare earths (ELIAS), A., ii, 81.

**Magnetic rotation**, relation between, refractivity and density of solutions (SCHWERS), A., ii, 92.

**Molecular rotation** in normal homologous series (HILDITCH: CHRISTOPHER and HILDITCH), P., 311.

## PHOTOCHEMISTRY :—

**Rotatory dispersion** (TSCHUGAEFF), A., ii, 450, 787.

anomalous (ELIAS), A., ii, 679.

natural and magnetic (DARMOIS), A., ii, 352.

**Rotatory power** and chemical constitution (PICKARD and KENYON), T., 45; P., 324; (HILDITCH), T., 218, 224; P., 6.

of optically active compounds, influence of the solvent on (LANDAU), A., ii, 450.

**Micro-polarisation**, apparatus for (FISCHER), A., ii, 85.

**Spectra**, origin of (HORTON), A., ii, 677; (STARK), A., ii, 678.

of gases (DONALDSON), A., ii, 1042.

separation of, in compound gases (STEAD), A., ii, 1041.

of hydrocarbons and of metals (MEUNIER), A., ii, 679.

absorption (EYDMAN), A., ii, 237; (STEWART and WRIGHT), A., ii, 1043.

of open-chain and cyclic compounds (CRYMBLE, STEWART, WRIGHT, and REA), T., 1262; P., 153.

influence of conjugated linking on (CRYMBLE, STEWART, WRIGHT, and GLENDINNING), T., 451; P., 46.

relation between, and phosphorescence (BRÜNINGHAUS), A., ii, 562.

of halogen derivatives of benzene and toluene (PURVIS), T., 1699; P., 218.

of derivatives and isomerides of 1:2-diketo- $\Delta^3$ -cyclopentene (PURVIS), T., 107.

of hydrocarbons and their derivatives (STOBBE and EBERT), A., ii, 561.

of metallic ions, relation between, and their valency (CRYMBLE), P., 68, 328.

of permanganates (MERTON), T., 637; P., 66.

of salts as affected by temperature and reagents (JONES and STRONG), A., ii, 166.

of sulphur compounds (PURVIS), A., ii, 560.

and fluorescence, influence of temperature and magnetism on (DU Bois and ELIAS), A., ii, 832.

anode and cathode, of gases and vapours (STEAD), A., ii, 830.

## PHOTOCHEMISTRY:—

**Spectra**, arc, effect of pressure on (DUFFIELD), A., ii, 350.  
 band, energetics and chemistry of (STARK), A., ii, 785.  
 emission, of solid aromatic substances (GOLDSTEIN), A., ii, 560.  
 of the alkali metals in the glow discharge (GEHLHOFF), A., ii, 83.  
 of luminous gases (JUNGJOHANN), A., ii, 82.  
 stellar, sequence of chemical forms in (LOCKYER), A., ii, 82.  
 ultra-violet absorption, of nitro-compounds (ZELINSKY and ROSANOFF), A., ii, 1044.

**Spectral lines**, structure of, in weak magnetic fields (LUNELUND), A., ii, 237.

**Photographic images**. See under Photochemistry.

**Phototropy** and thermotropy, studies in (SENIER and CLARKE), T., 2081; P., 260.

**Phthalacene**, oxidation of (MAROTTA), A., i, 980.

**Phthalanil**, imino-, oximino-, and thio- (REISSERT and HOLLE), A., i, 981.

**Phthalbromoanil**, bromoimino-, and its dibromide (REISSERT and HOLLE), A., i, 982.

**Phthaleins**, spectrographic studies of the (MEYER and FISCHER), A., i, 723.  
 from 3:5:3':5'-tetrahydroxydiphenyl and their derivatives (MEYER and MEYER), A., i, 872.

**Phthalein salts**, composition of (MEYER and POSNER), A., i, 645.

**Phthalic acid**, cetyl, phytanyl, and phytyl esters of, and their silver salts (WILLSTÄTTER, MAYER, and HÜNI), A., i, 145.  
 cotarnine salt of (FREUND), A., i, 561.  
 phenylmethylcarbonyl hydrogen, potassium  $\beta$ -butyl hydrogen, and brucine salts of (PICKARD and KENYON), T., 58.  
 yttrium salt of (PRATT and JAMES), A., ii, 893.  
 3:5-dibromo-, and its anhydride (ULLMANN and KOPETSCHNI), A., i, 292.

**isoPhthalic acid**, and 2-hydroxy-, and 2-nitro-, methyl and ethyl esters and derivatives of (WOHL and NAGEL-SCHMIDT), A., i, 58.

**isoPhthalic acid**, 4:6-diamino-, and its derivatives (BOGERT), A., i, 983.  
 2-iodo-, and its methyl ester (MAYER), A., i, 869.

**$\omega$ -Phthaliminoacetophenone**, *p*-amino-, acetyl derivative (KUNCKELL), A., i, 990.

**Phthaliminobromoacetone** (GABRIEL), A., i, 645.

**Phthalimindibromoacetone** (GABRIEL), A., i, 645.

**Phthaliminotribromoacetone** (GABRIEL), A., i, 645.

**Phthaliminotetrabromoacetone** (GABRIEL), A., i, 645.

**Phthalimino- $\alpha$ - $\beta$ -dibromopropane** (GABRIEL), A., i, 645.

**$\alpha$ -Phthaliminoisobutyric acid** and its chloride (GABRIEL), A., i, 212.

**$\alpha$ -Phthaliminoisobutyric anhydride** (GABRIEL), A., i, 227.

**$\alpha$ -Phthaliminoisobutyrophenone** (GABRIEL), A., i, 212.

**Phthaliminoisobutyryl bromide** (GABRIEL), A., i, 982.

**$\alpha$ -Phthaliminoisobutyrylmalonic acid ethyl ester** (GABRIEL), A., i, 213.

**Phthaliminohydroxyacetone** (GABRIEL), A., i, 645.

**$\gamma$ -Phthalimino- $\alpha$ -hydroxybutyric acid**, and its barium and calcium salts (FISCHER and GODDERTZ), A., i, 19.

**Phthaliminopinacolin** (WIDMAN and WAHLBERG), A., i, 703.

**$\beta$ -Phthaliminopropane**,  $\alpha$ - $\beta$ -dibromo- (GABRIEL), A., i, 982.

**Phthalimincyclopropane** (GABRIEL), A., i, 645.

**Phthaliminocyclopropane**, tribromo- (GABRIEL), A., i, 983.

**$\beta$ -Phthalimino propylene**, and bromo-, dibromo-, and tribromo- (GABRIEL), A., i, 982.

**Phthaloaceperinone** (SACHS and MOSEBACH), A., i, 961.

**2:3-Phthaloyldiphenyl-3'-phthaloylic acid**, 4:4'-dihydroxy- (SCHOLL and SEER), A., i, 454.

**6:7-Phthaloyl-*N*-methylthiodiphenylamine-2-phthaloylic acid** (SCHOLL, SEER, and FRITSCH), A., i, 559.

**Phthaloylphenyl sulphide** (SCHOLL and SEER), A., i, 558.

**2:3-Phthaloylthianthren** (SCHOLL and SEER), A., i, 557.

**Phthalyl-*p*-bromophenylhydrazide** (CHATTAWAY and WUNSCH), T., 2260.

**Phthalyl-*p*-chlorophenylhydrazide** (CHATTAWAY and WUNSCH), T., 2261.

**Phthalylhydrazides**, polymorphic (CHATTAWAY and WUNSCH), T., 2253; P., 193.

**Phthalyl- $\alpha$ - and  $\beta$ -naphthylhydrazide** (CHATTAWAY and WUNSCH), T., 2265.

**Phthalylphenylbenzylhydrazide** (CHATTAWAY and WUNSCH), T., 2264.

**Phthalylphenylmethylhydrazide** (CHAT-TAWAY and WÜNSCH), T., 2261.

**Phthalyl-*o*-, and *p*-tolylhydrazide** (CHAT-TAWAY and WÜNSCH), T., 2259.

**Phyllocladene** (BAKER and SMITH), A., i, 479.

**Phyllohaemin**, preparation of (MARCHLEWSKI and ROBEL), A., i, 735.

**Phylloporphyrin**, preparation of (MARCHLEWSKI and ROBEL), A., i, 552.

**Physiological action and chemical constitution** (EMDE), A., ii, 313; (HEUBNER), A., ii, 515.

**Physiological fluids**, so-called, replacement of calcium in (BUGLIA), A., ii, 131.

**Physiological processes**, the optimum temperature for (VAN AMSTEL and VAN ITERSON), A., ii, 319. variation in temperature coefficients of (SNYDER), A., ii, 618.

**Physovenine** (SALWAY), T., 2152; P., 273.

**Phytadiene** (WILLSTÄTTER, MEYER, and HÜNI), A., i, 147.

**Phytane**, and *di*-*iodo*-, and *tri*hydroxy- (WILLSTÄTTER, MEYER, and HÜNI), A., i, 147.

**Phytanic acid** and its derivatives (WILLSTÄTTER, MEYER, and HÜNI), A., i, 146.

**Phytanol** and its derivatives (WILLSTÄTTER, MEYER, and HÜNI), A., i, 145.

**Phytase** in lower fungi (DOX and GOLDEN), A., ii, 1022.

$\Delta\beta$ -**Phytenic acid** (WILLSTÄTTER, MEYER, and HÜNI), A., i, 146.

**Phytin**, preparation of pure, and its physiological importance (STARKENSTEIN), A., ii, 132. and its derivatives (VORBRODT), A., i, 263.

**Phytochlorin** -*e*, -*f*, -*g*, and -*i*, and their salts and esters (WILLSTÄTTER and UTZINGER), A., i, 662.

$\alpha$ - and  $\beta$ -**Phytol** and their derivatives (WILLSTÄTTER, MEYER, and HÜNI), A., i, 144.

**Phytosterol**,  $C_{26}H_{44}O$ , and its derivatives from *Linaria vulgaris* (KLOBB and GARNIER), A., i, 972.

$C_{27}H_{46}O$ , from *Withania somnifera* (POWER and SALWAY), T., 493; P., 53. and its derivatives from *Tilia europea* (KLOBB and GARNIER), A., i, 972. from bryony root (POWER and MOORE), T., 942; P., 118. from the root of *Lasiosiphon Meissnerianus*, and its acetyl derivative (ROGERSON), A., ii, 325.

**Phytosterols**, relations of cholesterol with (SALKOWSKI), A., i, 45.

*l*-**Phytosterols** (KLOBB), A., i, 972.

**Phytyl ether** (WILLSTÄTTER, MEYER, and HÜNI), A., i, 145.

*Picea excelsa*, resin from (KÖHLER), A., i, 295.

**Picoline** methonitrite (NEOGI), T., 1601; P., 208.

$\alpha$ -**Picoline**, betaine of, and its salts (KIRPAL), A., i, 157. compound of, with carbon tetrabromide, and auribromide (DEHN and DEWEY), A., i, 915.

**Picolinic acid**, betaine of, and its hydrochloride (KIRPAL), A., i, 157.

**Picolinic acid**, 3:5-dichloro-4-amino-, 3:5-dichloro-4-hydroxy-, and dichloro-3(or 5)-hydroxy- (SELL), T., 1681; P., 221.

$\alpha$ -**Picolinium** osmichloride (GUTBIER and WALBINGER), A., i, 191. platinibromide (GUTBIER, BAURIEDEL, and OBERMAIER), A., i, 33. rutheni-bromide and -chloride (GUTBIER and LEUCHS), A., i, 183.

$\alpha$ ,  $\beta$ -, and  $\gamma$ -**Picraminobenzoic acids**, and their salts (CROCKER and MATTHEWS), T., 301; P., 22.

**Pieric acid**, colour and molecular state of (DREAPER), T., 2094; P., 244. metallic salts of (KAST), A., i, 852. crystallography of metallic salts of (BAUMHAUER), A., i, 431. dyeing with (V. GEORGIEVICS), A., i, 537. sodium salt, solubility of, in solutions of sodium salts (FISCHER and MILOSZEWSKI), A., i, 193. compound of, with benzoyldianilinostilbene (EVEREST and MCCOMBIE), T., 1759.

**Picrotoxin** (ANGELICO), A., i, 1003.

**Picrotoxinin** and its derivatives (CERVELLO), A., ii, 419.

**Picryl** chloride, additive compound of isoapiole and, crystallography of (BOERIS), A., i, 290.

$\alpha$ -**Picrylaminophenylmercaptan** (KEHRMANN and STEINBERG), A., i, 1034.

**Piezochemical studies** (COHEN, INOUYE, and EUWEN), A., ii, 23.

**Pigments**, cutaneous (DYSON), A., ii, 307. from oxidation by bacteria (BEYERINCK), A., ii, 518.

**Pilocarpine**, physiological action of (WATERMAN), A., ii, 220, 636. benzaldehyde anhydrosulphite (MAYER), A., i, 224.

*l*-**Pimamic acid** from *Picea excelsa* (KÖHLER), A., i, 295.

**Pinacolin** derivatives (RICHARD), A., i, 6; (DELACRE), A., i, 102.  
**transformation** (LINDNER), A., i, 522.

**Pinacolin**,  $\omega$ -bromo-, and  $\omega$ -cyano- and potassium salt of the latter (WIDMAN and WAHLBERG), A., i, 702.

**Pinacolyl alcohol**, derivatives of (RICHARD), A., i, 7.

**sec.- and tert.-Pinacolyl alcohols**, catalytic dehydration of (COUTURIER), A., i, 939.

**Pinacolylamine** hydrochloride (WIDMAN and WAHLBERG), A., i, 703.

**Pinacolylphthalamic acid** (WIDMAN and WAHLBERG), A., i, 703.

**Pinacone**, quantitative dehydration of pure (DELACRE), A., i, 347.  
 pure and crude, products of hydrolysis of (DELACRE), A., i, 939.  
 hydrate, preparation of (PARRY), T., 1170; P., 141.

**Pinacones**, synthesis of (PARRY), T., 1169; P., 141.

**Pine**, dwarf. See *Pinus pumilio*.

**Pines**. See *Coniferae*.

**Pineal gland**, effect of injection of extracts of, on blood pressure (EYSTER and JORDAN), A., ii, 215.

$\alpha$ -**Pinene**, catalytic isomerisation of (ZELINSKY), A., i, 997.

*d*-**Pinenechloro-oxime**, action of piperidine (BUSCHUEFF), A., i, 313.

**Pinene nitrosoazide**, two isomerides and their derivatives (FORSTER and NEWMAN), T., 247; P., 19.

**Pinewood oil**, detection of, in turpentine oil (GRIMALDI), A., ii, 231.

**Pinewood-tar**, constituents of (MÜLLER), A., i, 897.

**Pinol nitrosoazide** (FORSTER and VAN GELDEREN), T., 2067.

**Pinolone**, constitution and synthesis of (WALLACH), A., i, 891.

**Pinophanic acid**, synthesis of (KOMPPA), A., i, 642.

*Pinus longifolia*, constituents of the oil of (ROBINSON), P., 247.

*Pinus pumilio* (dwarf pine), constituents of the oil of the (BOCKER and HAHN), A., i, 549.

$\alpha$ -**Pipecoline**, preparation of aliphatic halogen compounds from (v. BRAUN and SOBECKI), A., i, 413.

**Piperazine**, 2:5-dithio-, and its metallic salts (JOHNSON and BURNHAM), A., i, 713.

**Piperidine**, action of, on *d*-pinene chloro-oxime (BUSCHUEFF), A., i, 313.  
 compound of, with carbon tetrabromide, and auribromide (DEHN and DEWEY), A., i, 914.  
 nitrite (NEOGI), T., 1599; P., 208.

**Piperidine methonitrite** (NEOGI), T., 1600; P., 208.

**Piperidylacetyleatechol** and its hydrochloride (MANNICH and HÜBNER), A., i, 566.

**Piperidylstyryl phenyl ketone** (ANDRÉ), A., i, 269.

$\beta$ -**Piperil-*β*-naphthylhydrazone** (PADOA and SANTI), A., i, 694.

$\beta$ -**Piperil-*m*-tolylsazone** (PADOA and SANTI), A., i, 694.

**Piperine**, salts and stanni-salts of (PFEIFFER, FRIEDMANN, GOLDBERG, PROS, and SCHWARZKOPF), A., i, 792.

**Piperonaldehyde**, action of, on the sodium derivative of phenylacetonitrile (BODROUX), A., i, 783.

**Piperonaldehyde-*p*-methoxyphenylhydrazone** (PADOA and SANTI), A., i, 1029.

$\beta$ -**Piperonylacrylic acid**,  $\alpha$ -cyano-, ethyl ester (CLARKE and FRANCIS), A., i, 205.

*allo*-**Piperonylacrylic acid** and its derivatives (STOERMER, FRIDERICI, BRÄUTIGAM, and NECKEL), A., i, 297.

$\alpha$ -**Piperonyl- $\delta\delta$ -dimethylfulgenic acid** (STOBBE and LENZNER), A., i, 374.

$\alpha$ -**Piperonyl- $\delta\delta$ -dimethylfulgide** (STOBBE and LENZNER), A., i, 374.

**4-Piperonylideneamino 2-acetyl- $\alpha$ -naphthol** (TORREY and CARDARELLI), A., i, 68.

**Piperonylidenehydantoin** (WHEELER and HOFFMAN), A., i, 499.

$\alpha$ -**Piperonylidene- $\gamma$ -methylenedioxy-phenylparaconic acid** (STOBBE, VIEWEG, ECKERT, and REDDELLEN), A., i, 378.

$\epsilon$ -**Piperonyl- $\beta$ -methyl- $\Delta\beta$ -pentene- $\gamma\delta$ -dicarboxylic acid** (STOBBE and LENZNER), A., i, 374.

**2-Piperonylnaphthalavanone**, 6'-nitro-, (TORREY and CARDARELLI), A., i, 68.

$\alpha$ -**Piperonyl- $\delta$ -2-naphthyl- $\delta$ -methyl-fulgide** (STOBBE and LENZNER), A., i, 379.

$\alpha$ -**Piperonyl- $\delta$ -phenyl- $\delta$ -methylfulgenic acid** (STOBBE, GADEMANN, and ROSE), A., i, 379.

$\alpha$ -**Piperonyl- $\delta$ -phenyl- $\delta$ -methylallo-fulgenic acid** (STOBBE, GADEMANN, and ROSE), A., i, 379.

$\alpha$ -**Piperonyl- $\delta$ -phenyl- $\delta$ -methylfulgide** (STOBBE, GADEMANN, and ROSE), A., i, 379.

$\alpha$ -**Piperonyl- $\delta$ -phenyl- $\delta$ -methylallo-fulgide** (STOBBE, GADEMANN, and ROSE), A., i, 379.

**Piperonyloin**, properties of, and its carbamide and thiocarbamide (TORREY and SUMNER), A., i, 68.

**2-β-Piperonylpropionyl-α-naphthol**,  $\beta$ -hydroxy-6'-nitro-, and its derivatives (TORREY and CARDARELLI), A., i, 68.

**Pipette**, automatic (PERMIN), A., ii, 221.

**Pitchblende**, rate of development of heat by (POOLE), A., ii, 86.

**Pituitary body**, effects of extracts of different parts of the (MILLER, LEWIS, and MATTHEWS), A., ii, 217.

absence of iodine from the (DENIS), A., ii, 746.

effect of injury to the, on carbohydrate tolerance (GOETSCH, CUSHING, and JACOBSON), A., ii, 745.

possible vicarious relationship between the thyroid and the (SIMPSON and HUNTER), A., ii, 1112.

**Pivalic acid**, anilide of (SCHROETER), A., i, 506.

**Pivalophenone chloride** (SCHROETER), A., i, 505.

**Placenta**, mature human, constituents of the (KOELKER and SLEMONS), A., ii, 746.

**Plague**, use of chromium salts in combating (KOENIG), A., ii, 311.

**Plant**, annual, conservation of salts by an (ANDRÉ), A., ii, 141, 423; (MAZÉ), A., ii, 424.

assimilation, mechanism of (USHER and PRIESTLEY), A., ii, 817.

assimilation and respiration (BLACKMAN and SMITH), A., ii, 423.

cells, albumin and tannin in (LOEW and BOKORNY), A., ii, 324.

development, influence of aluminium and manganese on (STOKLASA), A., ii, 643.

extracts, presence of catechol in (WHELDALE), A., ii, 818.

organs, diffusion of salts through (ANDRÉ), A., ii, 760.

respiration (ZALESKI and REINHARD), A., ii, 1021.

action of salts on (REINHARD), A., ii, 141.

action of stimulants on (IWANOFF), A., ii, 522.

tissues, betaines in (SCHULZE and PFENNINGER), A., ii, 426.

**Plants**, chemistry of (KEEGAN), A., ii, 917.

micro-chemistry of (TUNMANN), A., ii, 1022, 1023.

action of ultra-violet light on (POUGNET), A., ii, 529.

action of formaldehyde on (BOKORNY), A., ii, 1021.

electromotive phenomena in (BRITISH ASSOCIATION REPORTS), A., ii, 817.

**Plants**, osmosis in (ARMSTRONG and ARMSTRONG), A., ii, 918.

action of anaesthetics on osmosis in (LEPESCHKIN), A., ii, 919.

action of methylene-blue on the respiration and fermentation of (PALLADIN, HÜBBENET, and KORSAKOFF), A., ii, 919.

death of, at low temperature (RICHTER), A., ii, 64.

genesis of alkaloids in (CIAMICIAN and RAVENNA), A., ii, 761.

production of amino-acids in (FRANZEN), A., ii, 323.

influence of anaesthetics and of cold on coumarin-producing (HECKEL), A., ii, 761.

degradation of arginine in (KIESEL), A., ii, 1124.

isolation of betaine from (STANĚK), A., ii, 818.

wandering of betaine in (STANĚK), A., ii, 1124.

function of the catalases in (ZALESKI and ROSENBERG), A., ii, 643.

formation of chlorophyll in (MONTEVERDE and LUBIMENKO), A., ii, 424.

influence of enzymes on the respiration of (LWOFF), A., ii, 641.

assimilation of nitrogen by the leaves of (OTTO and KOOPER), A., ii, 524.

rôle of nucleoproteins in (ZALESKI), A., ii, 819.

relation of the odorous constituents of, to plant metabolism (RABAK), A., ii, 819.

absorption of substances by the roots of (VASSALLO), A., ii, 522.

tolerance of, to boric acid (AGULHON), A., ii, 142.

calcium requirements of (KONOWALOFF), A., ii, 222.

assimilation of carbon by (CAILLETET), A., ii, 642; (MAQUENNE), A., ii, 760.

effect of chromium compounds on (KOENIG), A., ii, 524.

disinfection of (DANESI and TOPI), A., ii, 820.

absorption of phosphoric acid by (PFEIFFER and BLANCK), A., ii, 764.

effect of heating soil on the growth of (FLETCHER), A., ii, 530.

respiration enzymes of (ZALESKI), A., ii, 323.

influence of various toxic compounds on (SCHREINER), A., ii, 427.

green, assimilation of carbon dioxide by (GRAFE), A., ii, 521.

action of alcohols on (BOKORNY), A., ii, 522.

**Plants**, green, aldehyde in the leaves of (FRANZEN), A., ii, 524.  
 action of gaseous formaldehyde on (GRAFE), A., ii, 818.  
 action of insecticides from coal tar on (MIRANDE), A., ii, 223.  
 higher, action of hydrolysable salts and colloids on (GRÉGOIRE), A., ii, 422.  
 assimilation of nitrogen by (HUTCHINSON and MILLER), A., ii, 920.  
 assimilation of atmospheric nitrogen by (MAMELI and POLLACCI), A., ii, 759.  
 higher and lower, increase in the activity of, by small amounts of poisons (FRED), A., ii, 1123; (KOCH), A., ii, 1124.  
 non-leguminous, relation of, to the nitrate content of soils (LYON and BIZZELL), A., ii, 1025.  
 tropical, fats extracted from the fruits of (HÉBERT), A., ii, 819.  
 water, estimation of the gaseous exchange of (BLACKMAN and SMITH), A., ii, 423.  
 detection of arbutin in (TUNMANN), A., ii, 669.

**Plasma** membrane, composition of the (LEPESCHKIN), A., ii, 817.

**Plastein** formation (RAKOCZY), A., i, 1050; (HENRIQUES and GJALDBÄK), A., ii, 505.

**Platinocyanides**. See under Platinum.

**Platinum**, sodium chloride and mercury, reactions in the system (PETERS), A., ii, 1095.  
 bromo-salts of (GUTBIER, BAURIEDEL, and OBERMAIER), A., i, 32.  
 stereoisonionic sulphamino-salts of (KIRMREUTHER), A., ii, 1098.

**Platinocyanides**, crystallography of (BAUMHAUER), A., i, 431.

**Platinum**, assay of (STEINMANN), A., ii, 1035.  
 separation of, and tin (WÖHLER and SPENGEL), A., ii, 338.

**Platinum triangle**, substitute for the (BENNER), A., ii, 269.

**Pnein** (THUNBERG), A., ii, 627; (BATTELLI and STERN), A., ii, 748.

**Poison** of fish, method of action of (PRIESS), A., ii, 638.  
 from tetrodon (TAHARA), A., ii, 133.  
 toad, reactions of (BUFALINI), A., ii, 348.

**Poisons**, increase in the growth of plants by small amounts of (FRED), A., ii, 1123; (KOCH), A., ii, 1124.  
 metallic, action of (MÜLLER, SCHOELLER, and SCHRAUTH), A., ii, 755.

**Poisons**, mineral, destruction of organic matter in the detection of (BRETEAU), A., ii, 226.  
 influence of, on the enzymes of blood (DUNCKER and JODLBAUER), A., ii, 756.

**Poisoning**, cobra (BANG and OVERTON), A., ii, 316.  
 by oleic acid, behaviour of red blood-corpuscles in (SCHMINCKE and FLURY), A., ii, 125.  
 by oxalic acid (SARVONAT and ROUBIER), A., ii, 815.  
 excitability of nerves in (CHIARI and FRÖHLICH), A., ii, 1018.  
 by phosphorus, changes in the liver in (SLOWTZOFF), A., ii, 315; (WOHLGEMUTH), A., ii, 517.  
 metabolism in (FRANK and ISAAC), A., ii, 315.  
 inefficiency of the suprarenals in cases of (NEUBAUER and PORGES), A., ii, 637.  
 by sewer-gas (GÖHLICH), A., ii, 221.

**Polarity**. See under Electrochemistry.

**Polonium**, spontaneous charging of (CAMPBELL), A., ii, 959.  
 effect of electric and magnetic fields on the charging of (HAUSER), A., ii, 685.  
 intervals of emission of  $\alpha$ -particles of (CURIE), A., ii, 1047.  
 ionisation of gases by the  $\alpha$ -particles from (TAYLOR), A., ii, 354.

*iso***Polyacids** (ROSENHEIM and WEINHEBER), A., i, 109; (ROSENHEIM and PINSKER), A., i, 265; (ROSENHEIM and KOHN), A., ii, 116; (ROSENHEIM), A., ii, 612.

**Polybasite**, formula of (VAN HORN), A., ii, 807.

**Polycinnamic acid** and its esters (LIEBERMANN and ZSUFFA), A., i, 370.

**Polyhalite** from Nancy (DÜRRFELD), A., ii, 295.

**Polymerisation** and bleaching (STOBBE and EBERT), A., ii, 452.

**Polymorphism** and isomerism (BILLMANN), A., i, 367, 963; (CIUSA and VECCHIOTTI), A., i, 810; (STOBBE), A., ii, 970.

**Polypeptides**, synthesis of (HOPWOOD and WEIZMANN), T., 1577; P., 214; (ABDERHALDEN, CHANG, and WURM), A., i, 526.  
 methylated (ABDERHALDEN and KAUTZSCH), A., i, 528, 954.  
 optically active, preparation of, from racemic compounds (ABDERHALDEN and GEDDERT), A., i, 842.

**Polyporus frondosus**, chemistry of (BAMBERGER and LANDSIEDL), A., ii, 920.

**Polysaccharides**, action of invertase on, derived from laevulose (BOURQUELOT and BRIDEL), A., i, 512.

colorimetric method of determining the molecular size of (WACKER), A., i, 355.

**Porcelain** membranes, permeability of (BARTELL), A., ii, 1072.

**Position-isomerides**, aromatic, influence of molecular symmetry on optical activity of (HILDITCH), A., i, 892.

**Position isomerism**, relation of, to optical activity (COHEN), T., 1058; P., 123.

"**Potash**," history of (v. LIPPMANN), A., ii, 38.

**Potash bulb** (WATERS), A., ii, 153.

**Potash-salt** deposits, iron compounds in the (BOEKE), A., ii, 293.

distribution of borates in (BILTZ and MARCUS), A., ii, 1101.

**Potassium**, relation between chemical affinity and the photoelectric effects of (POHL and PRINGSHEIM), A., ii, 90.

and sodium compounds, isomorphism of (SOMMERFELDT), A., ii, 38.

and sodium salts, antagonism in the toxicity of (LOEB and WASTENEYS), A., ii, 420.

**Potassium salts**, sodium content of (SATTERLEY), A., ii, 243.

effect of, on the circulation and on muscle (MATHISON), A., ii, 753.

and sodium, action of, on water (BANERJEE), A., ii, 109.

**Potassium bismuthide** (VOURNASOS), A., ii, 405.

bromide and cuprous bromide, thermal analysis of mixtures of (DE CESARIS), A., ii, 804.

rhodobromide (GOLOURKINE), A., ii, 45.

cupric carbonates (PICKERING), T., 800; P., 55.

hydrogen carbonate, action of, on soluble magnesium salts (NANTY), A., ii, 282.

equilibrium between, and magnesium carbonate (NANTY), A., ii, 103.

sodium carbonates (OSAKA), A., ii, 723.

chlorate, ratio of the molecular weights of, and potassium chloride (STAHLER and MEYER), A., ii, 881.

detection and estimation of potassium perchlorate in (SCHERRINGA), A., ii, 153.

perchlorate, detection and estimation of, in potassium chlorate (SCHERRINGA), A., ii, 153.

**Potassium chloride**, ratio of the molecular weights of potassium chlorate and (STAHLER and MEYER), A., ii, 881.

and sulphate, transference experiments with (MACKAY), A., ii, 366.

influence of sodium chloride on the toxicity of (LOEB and WASTENEYS), A., ii, 517, 756.

antagonism of salts of the alkaline earths to the action of (LOEB and WASTENEYS), A., ii, 637.

and sodium chloride in food (BIERNACKI), A., ii, 633.

platinichloride, reduction of (FIECHTER), A., ii, 933.

dichromate and iodide, velocity of reaction between (KERNOT and PIETRAFESA), A., ii, 383.

fluoride, hydrates of (DE FORCRAND), A., ii, 488.

hydroxide, preparation of colourless alcoholic (GAZE), A., ii, 225; (MALFATI), A., ii, 979.

manganate, thermal formation of (BAHR and SACKUR), A., ii, 1091.

nitrate, formation of, from the point of view of the phase rule (JÄNECKE), A., ii, 799.

fused, specific conductivity of (ÅREN), A., ii, 1051.

and sodium nitrates, heat of solution of fused mixtures of (v. ZAWIDZKI and SCHAGGER), A., ii, 257.

nitrite (DONATH), A., ii, 799.

permanganate, kinetics of the action of hydrogen on solutions of (JUST and KAUKO), A., ii, 494.

oxidation of organic compounds by (HETPER), A., ii, 339.

ferric sulphate as a standard for titration of (MILBAUER and QUADRAT), A., ii, 936.

ammonoplumbite (FRANKLIN), A., ii, 983.

dibromo-, dichloro-, and di-iodo-disulphaminoplatinites (KIRMREUTHER), A., ii, 1099.

sulphate, copper sulphate and water, the system (MEERBURG), A., ii, 380.

mixed crystals of, with sodium sulphate (NACKEN), A., ii, 109.

acid sulphate (STORTENBEKER), A., ii, 392.

lead sulphate, formation of (BRÖNSTED), A., ii, 856.

persulphate, interaction of, with silver nitrate and its catalytic effect in oxidation of organic substances (AUSTIN), T., 262; P., 24.

barium orthothioantimonate (GLATZEL), A., ii, 980.

**Potassium** barium orthothioarsenate (GLATZEL), A., ii, 801.  
 thiosulphate, hydrates of (JO), A., ii, 723.

**Potassium organic compounds** :—  
 caseinogenates, conductivity of (ROBERTSON), A., ii, 460.  
 cyanate, reduction of (LIDOFF), A., i, 617.  
 cyanide, action of formaldehyde on (FRANZEN), A., ii, 323.  
 ethoxide, action of hydrogen sulphide on (RULE), T., 558; P., 60.  
 ferricyanide, isomeride of (BELLUCCI and SABATINI), A., i, 430.  
 action of, with silver nitrate and ammonia or amines (GASTALDI), A., i, 185.  
 ferri- and ferro-cyanides, magnetic susceptibilities of (OXLEY), A., ii, 251.  
 ferrocyanide, purification and analytical control of (SCHRÖDER), A., ii, 1143.  
 aquopentacyanoferite (CAMBI), A., i, 431.  
 ferrosulphitocyanide (CAMBI), A., i, 431.  
 titanium formate (STÄHLER and BACH-RAN), A., ii, 1097.

**Potassium**, detection of (BOWSER), A., ii, 1031.  
 estimation of (FRESENIUS and BRINTON), A., ii, 333.  
 estimation of, volumetrically (SHEDD), A., ii, 333; (BOWSER), A., ii, 1135.  
 estimation of, in urine (GREEN), A., ii, 135.

Pot-culture experiments (VOELCKER), A., ii, 922.

**Potential**. See under *Electrochemistry*.

**Powders**, agglomeration of (SCHUYTEN), A., ii, 98.

smokeless, estimation of camphor in (MARQUEYROL), A., ii, 774.

**Praseodymium** ammonium molybdate (BARBIERI), A., ii, 291.  
 rubidium nitrate (JANTSCH and WIGDOROW), A., ii, 115.  
 disulphide and oxysulphide (BILTZ), A., ii, 891.

**Precipitates**, agglomeration of (HERTKORN), A., ii, 190.  
 globular appearance of (BARDACH), A., ii, 99.  
 washing of (SCHERINGA), A., ii, 765.

**Precipitation**, coefficient of (PAWLOFF : V. WEIMARN), A., ii, 261.  
 apparatus for, in an inert gas (FIRTH and MYERS), P., 96.

Precipitin reaction (WELSH and CHAPMAN), A., ii, 809.

**Preserves**, estimation of copper in (LAKUS), A., ii, 771.

**Pressure**, apparatus to vary (VILLIERS), A., ii, 594.  
 constant, apparatus for the maintenance of (WADE and MERRIMAN), T., 984; P., 64.

**Pressure gauge**, influence of water vapour on measurements in a McLeod (GUICHARD), A., ii, 582.

**Proline**, formation of, in digestion of gliadin (FISCHER and LONDON), A., ii, 905.  
 estimation of (VAN SLYKE), A., ii, 780.

**Prolylglycineanhydride**, formation of (LEVENE), A., i, 97.

**Propaldehyde** brucine sulphite (MAYER), A., i, 223.

**Propaldehyde**,  $\alpha\beta$ -dibromo-, condensation of, with malonic acid (LESPIEAU), A., i, 106.

**Propane**, *as-heptachloro-*, synthesis of (BÖESEKEN and PRINS), A., i, 173.  
 $\alpha\beta\gamma$ -tricyano- (THOLE and THORPE), T., 1689.

*cycloPropane* (trimethylene) derivatives (MICHIELS), A., i, 62, 459.

*cycloPropanecarboxylic acid*, action of the chloroanhydride of, on benzene in presence of aluminium chloride (KIJNER), A., i, 989.

*cycloPropanedicarboxylic acids*, conversion of substituted paraconic acids into (BARBIER and LOCQUIN), A., i, 722.

*cycloPropanecyclopentane-(1:1)-spiran-2:5-dione-3:4-dicarboxylic acid*, and its ethyl ester (RADULESCU), A., i, 458.

*Propane- $\alpha\beta\beta$ -tricarboxylic acid* (BLAISE and GAULT), A., i, 520.

*1-isoPropenyl-2-cyclobutanone* and its derivatives (LEBEDEFF), A., i, 775.

*o-Propenylphenol* (PAULY, V. BUTTLAR, and LOCKEMANN), A., i, 785.

*Propenylphthalamic acid* (JOHNSON and JONES), A., i, 455.

*Propenylphthalimide* (JOHNSON and JONES), A., i, 455.

*Propiolamide* (MOUREU and BONGRAND), A., i, 22.

*Propionamide*,  $\alpha$ -nitro-, and its ammonium salt, and  $\alpha$ -bromo- $\alpha$ -nitro-, and  $\alpha$ -chloro- $\alpha$ -nitro- (STEINKOPF and SUPAN), A., i, 4.

*Propionatochromo-base*, salts of a green and of a violet (WEINLAND and HOEHN), A., i, 104.

*Propionic acid*,  $\alpha$ -bromo-,  $\alpha$ - and  $\beta$ -chloro-, and  $\alpha$ -iodo, menthyl esters (COHEN), T., 1064.

**Propionic acid,  $\alpha$ -nitro, and its salts** (STEINKOPF and SUPAN), A., i, 4.

**dl-Propionyl-dl-alanine,  $\alpha$ -iodo, and its ethyl ester** (ABDERHALDEN, HIRSCH, and GUGGENHEIM), A., i, 954.

**dl-Propionylglycine,  $\alpha$ -iodo, and its ethyl ester** (ABDERHALDEN, HIRSCH, and GUGGENHEIM), A., i, 954.

**3-Propionylindole and its derivatives** (ODDO and SESSA), A., i, 487.

**p-Propionylphenylcarbamide** (KUNCKELL), A., i, 990.

**Propiophenone,  $p$ -amino, and its derivatives** (KUNCKELL), A., i, 990.

**Propiophenone 4:5-dimethyl ether, 2:4:5-trihydroxy-** (BARGELLINI), A., i, 305.

**$\alpha$ - and  $\beta$ -*o*-Propoxycinnamamide** (STOERMER, FRIDERICI, BRÄUTIGAM, and NECKEL), A., i, 296.

**$\alpha$ - and  $\beta$ -*o*-Propoxycinnamic acid** (STOERMER, FRIDERICI, BRÄUTIGAM, and NECKEL), A., i, 296.

**$\beta$ -Propoxyphenylpropionic acid**, (STOERMER, FRIDERICI, BRÄUTIGAM, and NECKEL), A., i, 296.

**$\beta$ -Propoxy- $\beta$ -phenylpropionic acid**, (SCRAUTH, SCHOELLER, and STRUENSEE), A., i, 642.

**$m$ -Propoxy- $\beta$ -phenylpropionic acid** (FARBENFAKRIKEN VORM. F. BAYER & Co.), A., i, 865.

**$\beta$ -Propoxypropionic acid, propyl ester** (PALOMAA and KILPI), A., i, 176.

**isoPropyl alcohol**, boiling points of aqueous solutions of (DOROSCHEWSKY and POLJANSKY), A., i, 253.

**Propyl ether, monochloro-,  $\beta$ -chloro-,  $\alpha\beta$ -dibromo-, and tetrachloro-, and their derivatives** (ODDO and CUSMANO), A., i, 942.

**$\beta$ -isoPropyl- $\gamma$ -acetylbutyric acid and its semicarbazone and oxime** (WALLACH), A., i, 310.

**$\beta$ -isoPropyladipic acid** (WALLACH and CHALLENGER), A., i, 472.

**Propylallylmalonic acid,  $\beta$ -hydroxy-, and its silver salt** (JOHNSON and HILL), A., i, 503.

**Propylamine peroxide, preparation of** (KUROVSKI and NISENMANN), A., i, 608.

**Propylaminoacetic acid, methyl ester** (FRANKLAND and O'SULLIVAN), T., 2335; P., 319.

**Propylammonium telluri-bromide and -chloride** (GUTBIER, FLURY, and MICHELER), A., i, 182.

**nitrite** (RAY and RAKSHIT), P., 291.

**$n$ - and *iso*-Propylammonium osmichloride** (GUTBIER and MAISCH), A., i, 19.

**isoPropylammonium rutheni-bromide and -chloride** (GUTBIER and LEUCHS), A., i, 183.

**telluri-bromide and -chloride** (GUTBIER, FLURY, and MICHELER), A., i, 182.

**2-*n*-Propylanthranol-9** (SCHOLL, POTSCHIWAUSCHEG, and LENKO), A., i, 1008.

**2-*n*-Propylanthraquinone, and 1-amino-, 1-iodo-, and 1-nitro-** (SCHOLL, POTSCHIWAUSCHEG, and LENKO), A., i, 1008.

**2-*iso*Propylanthraquinone, and 1-amino-, 1-iodo-, and 1-nitro-** (SCHOLL, POTSCHIWAUSCHEG, LENKO, and BÖCKER), A., i, 1009.

**2-*n*-Propylanthrone-9** (SCHOLL, POTSCHIWAUSCHEG, and LENKO), A., i, 1009.

**2-*iso*Propylanthrone-2** (SCHOLL, POTSCHIWAUSCHEG, LENKO, and BÖCKER), A., i, 1009.

**Propylbenzene**, equilibrium of, with antimony trichloride (MENSCHUTKIN), A., i, 532.

**$d$ -Propylbenzene,  $\alpha$ -chloro-** (PICKARD and KENYON), T., 71.

**4-*n*-Propylbenzophenone-2'-carboxylic acid** (SCHOLL, POTSCHIWAUSCHEG, and LENKO), A., i, 1008.

**4-*iso*Propylbenzophenone-2'-carboxylic acid** (SCHOLL, POTSCHIWAUSCHEG, LENKO, and BÖCKER), A., i, 1009.

**cycloPropylbenzylamine and its salts** (KIJNER), A., i, 989.

**4-*iso*Propylbenzylidenerhodanic acid, 3-nitro-** (PIZZUTI), A., i, 62.

**1-*iso*Propyl-2-cyclobutanone and its semicarbazone** (LEBEDEFF), A., i, 775.

**cycloPropylbutylcarbinol** (MICHELI), A., i, 63.

**cycloPropylisobutylcarbinol** (MICHELI), A., i, 63.

**cycloPropylbutylcarbinyl bromide** (MICHELI), A., i, 63.

**cycloPropyl butyl ketone** (MICHELI), A., i, 63.

**cycloPropyl isobutyl ketone** (MICHELI), A., i, 63.

**isoPropylcarbamidecarboxylic acid, ethyl and methyl esters** (MAUGUIN), A., i, 358.

**cycloPropylcarbinol and its acetate** (MICHELI), A., i, 63.

**cycloPropylcarbinyl ethyl ether** (MICHELI), A., i, 64.

**cycloPropyl chloromethyl ketone** (MICHELI), A., i, 63.

**$n$ -Propyl- $\beta$ -chloropropylene ether** (ODDO and CUSMANO), A., i, 942.

**Propylcoumaric acid.** See *α*-*o*-Propoxy-cinnamic acid.

**Propylcoumarinic acid.** See *b*-*o*-Propoxy-cinnamic acid.

**cycloPropyldimethylcarbinol,** transformations of (KIJNER and KLAWIKORDOFF), A., i, 635.

**4-*n*-Propyldiphenylmethane-2'-carboxylic acid** (SCHOLL, POTSCHIWAUSCHEG, and LENKO), A., i, 1008.

**4-*iso*Propyldiphenylmethane-2'-carboxylic acid** (SCHOLL, POTSCHIWAUSCHEG, LENKO, and BOCKER), A., i, 1009.

**Propylenediammonium auri-bromide and -chloride** (GUTBIER and OBERMAIER), A., i, 424.

**osmichloride** (GUTBIER and MAISCH), A., i, 19.

**cycloPropylethylpropylcarbinol** and its bromide (MICHELS), A., i, 63.

**α-Propylhydrohydrastinine** and its salts (FREUND and LEDERER), A., i, 907.

**isoPropylhydrohydrastinine** and its salts (FREUND and LEDERER), A., i, 907.

**Propylenedebisurethane, β-chloro-, and β-chlorobromo-** (ODDO and CUSMANO), A., i, 943.

***n*- and *iso*Propylenetetramethylidiaminodiphenylmethane** (LEMOULT), A., i, 399.

**Propylmalonylbenzidine** (REMFRY), T., 622.

**Propylmalonylmalonamide** (REMFRY), T., 619.

**9-Propyloxanthranol, β-bromo-, bromide of, and  $\alpha\beta$ -dibromo-** (KONDO), A., i, 67.

**1-*iso*Propylcyclopentan-3-one** and its semicarbazone (WALLACH and CHALENGER), A., i, 472.

**4-Propylphenol, 2:6-diamino-, and its diacetyl derivative, and 2:6-dinitro-, and their derivatives** (THOMS and DRAUBURG), A., i, 716.

**α-cycloPropylpropionic acid, α-hydroxy-** (KIJNER and KLAWIKORDOFF), A., i, 635.

**Propylisopropylcarbinol,** rotation of (PICKARD and KENYON), P., 324.

**β-cycloPropyl-Δ<sup>a</sup>-propylene** (KIJNER and KLAWIKORDOFF), A., i, 635.

**cycloPropyl propyl ketone** (MICHELS), A., i, 63.

**1-Propylpyridinium salts** (DECKER, KAUFMANN, SASSU, and WISLOKI), A., i, 1024.

**1-Propyl-2-pyridone** (DECKER, KAUFMANN, SASSU, and WISLOKI), A., i, 1024.

**1-Propylpyrrolidine and its salts** (v. BRAUN), A., i, 563.

**2-Propylquinoxaline-3-carboxylic acid, ethyl ester** (WAHL), A., i, 109.

**Protease from bacteria** (MEYER), A., i, 511.

**Protein formation in ripening seeds** (SCHULZE), A., ii, 322.

**coagulation, relationship between muscular rigor and** (ROSSI), A., ii, 812.

**increase of, during the fattening of full-grown animals** (PFEIFFER and FRISKE), A., ii, 304.

**Bence-Jones, in urine** (HOPKINS and SAVORY), A., ii, 417.

**of plasma, formation of, by yeasts and moulds** (EHRLICH), A., ii, 1122.

**metabolism.** See under Metabolism.

**Proteins, general chemistry of** (MICHAELIS and RONA), A., i, 90.

**in Egyptian mummies** (ABDERHALDEN and WEIL), A., ii, 630.

**electrochemistry of** (ROBERTSON), A., i, 91, 406, 407, 933; ii, 460.

**isoelectric constants of** (MICHAELIS and DAVIDSOHN), A., ii, 192.

**refractive indices of** (ROBERTSON), A., i, 341; (ROBERTSON and GREAVES), A., i, 589.

**heat coagulation of** (SØRENSEN and JØRGENSEN), A., i, 405; (CHICK and MARTIN), A., i, 822.

**biochemical classification of** (RODRIGUEZ CARRACIDO), A., i, 90.

**digestion of** (VAN SLYKE and WHITE), A., ii, 623.

**digestion of, in the dog-fish** (VAN SLYKE and WHITE), A., ii, 624.

**fixation of acids by** (RINGER), A., i, 406.

**partial hydrolysis of** (ABDERHALDEN), A., i, 589; (LEVENE, VAN SLYKE, and BIRCHARD), A., i, 822.

**cleavage of, in the alimentary canal** (ABDERHALDEN, KLINGEMANN, and PAPPENHUSEN), A., ii, 508.

**cleavage products of, in expired air** (WEICHARDT), A., ii, 993.

**action of bacteria on** (BAINBRIDGE), A., ii, 1121.

**action of the Bulgarian ferment on** (BERTRAND), A., ii, 140.

**influence of carbohydrates on the sparing of, in inanition** (WIMMER), A., ii, 1003.

**action of intestinal juice on the products of digestion of** (LONDON; LONDON and SOLOWEEFF), A., ii, 1000.

**precipitation of** (VANDEVELDE), A., ii, 630.

**Proteins**, precipitation and coagulation of (ROBERTSON), A., i, 695.  
 precipitation of, by zinc sulphate (LIPPICH), A., i, 934.  
 regeneration of, in the stomach (GLAGOLEFF), A., ii, 625.  
 compounds of, with inorganic acids and bases (ROBERTSON), A., i, 993.  
 of blood-serum (BREINL), A., ii, 741.  
 animal, action of, on vegetarians (ALBERTONI and ROSSI), A., ii, 411.  
 in the ovary of fish (MCCRUDDEN), A., ii, 415.  
 of living muscle, reactions between chemical compounds and the (VELEY), T., 180; P., 3.  
 of milk (VANDERVELDE), A., i, 91; (BAUER and ENGEL), A., ii, 307.  
 of wheat and barley, utilisation of (MENDEL and FINE), A., ii, 1109.  
 sulphur in (JOHNSON and BURNHAM), A., i, 696; (JOHNSON), A., i, 758.  
 iodo- (WHEELER and MENDEL; NEUBERG), A., i, 97.  
 preparation of 3:5-di-iodotyrosine from (OSWALD), A., i, 203, 372.  
 detection of (ABDERHALDEN and SCHMIDT), A., ii, 674.  
 detection of, with the biuret reaction (KANTOR and GIES), A., ii, 554.  
 diacetyl reaction for (HARDEN and NORRIS), A., i, 588.  
 Liebermann's reaction for (ALBERDA VAN EKENSTEIN and BLANKSMA), A., ii, 554.  
 analysis of (VAN SLYKE), A., ii, 944.  
 identification and estimation of, in honey (MOREAU), A., ii, 347.  
 estimation of (WESTHAUSER), A., ii, 674.  
 estimation of, in milk (RICHMOND), A., ii, 236.  
 estimation of the amide nitrogen in (DENIS), A., ii, 163.  
**Proteoses** (ZUNZ), A., i, 1050.  
**Proteosomes**, formation of, by caffeine (BOKORNY), A., ii, 142.  
**Proteus vulgaris**, biochemistry of (HERTER and TEN BROECK), A., ii, 758.  
**Protocatechualdehyde**, salts and derivatives of (PAULY, SCHÜBEL, and LOCKEMANN), A., i, 788.  
 dimethyl mercaptal and *di-p*-nitrobenzyl mercaptal (PAULY, v. BUTTLAR, and LOCKEMANN), A., i, 786.  
 cyclocarbonate and its derivatives (PAULY, SCHÜBEL, and LOCKEMANN), A., i, 787.  
**Protocatechualdehyde-m-carbonic acid**, methyl ester (PAULY, SCHÜBEL, and LOCKEMANN), A., i, 787.

**Protocatechualdehyde-m-carbopiperidide** (PAULY, SCHÜBEL, and LOCKEMANN), A., i, 787.  
**Protoveratrine**, effect of, on muscle and nerve (WALLER), A., ii, 138.  
**Protozoa**, biochemistry of (PANZER), A., ii, 813.  
**Prussian blue**, constitution of (BRIONI), A., i, 618.  
 composition of (MÜLLER, WEGELIN, TREADWELL, and DIEFENTHALER), A., i, 844.  
**Pulegolenide** and its reduction products (WALLACH and MEYER), A., i, 471.  
**Pulegohydrazine** and its thiosemicarbazone (KIJNER and ZAVADOVSKY), A., i, 1028.  
**Pumilone** and its semicarbazone (BÖCKER and HAHN), A., i, 550.  
**Pump**, automatic mercury (BEUTELL), A., ii, 105.  
 modified Boltwood (ODELL), A., ii, 268.  
 Geryk air, application of, to vacuum distillations (DOB), A., ii, 714.  
 suction-pressure (LIEBERT), A., ii, 480.  
 water, safety-valve for (BERG), A., ii, 714; (BEHREND), A., ii, 796.  
**Purine metabolism**. See under Metabolism.  
**Purine, δ-amino-**, derivatives of (KALLE & Co.), A., i, 507.  
**Purines** (JOHNS), A., i, 242, 506.  
**Purine diuresis**, excretion of the alkali metals in (BOCK), A., ii, 631.  
**Pyknometer**, new (v. KREYBIG), A., ii, 967.  
**Pyramidone**, detection of (MOULIN), A., ii, 777.  
**4-Pyramidone** (*m*-dimethylaminoantipyrine) (MICHAELIS, GRAFF, GESING, and BOIE), A., i, 234.  
**Pyranthrone** vat dyes (SCHOLL), A., i, 656.  
**Pyrazine** derivatives, preparation of (LANGE), A., i, 505.  
**1:2-Pyrazinoanthraquinone**. See Anthraquinonoxalinequinone.  
**Pyrazolones**, syntheses of (PALAZZO and LIVERANI), A., i, 920.  
**Pyrazolone dyes**, preparation of (BÜLOW and HECKING), A., i, 403.  
**5-Pyrazolone-3-carbamic acid**, 4-oximino-, methyl ester (CURTIUS and GOCKEL), A., i, 402.  
**5-Pyrazolone-3-carboxylamide**, 4-oximino-, and its ammonium salt (CURTIUS and GOCKEL), A., i, 402.  
**5-Pyrazolone-3-carboxyloazoimide**, 4-oximino-, and its derivatives (CURTIUS and GOCKEL), A., i, 402.

**5-Pyrazolone-3-carboxylobenzoylhydrazide** (CURTIUS and GOCKEL), A., i, 402.

**5-Pyrazolone-3-carboxylohydrazide** and its benzylidene derivative (CURTIUS and GOCKEL), A., i, 402.

**Pyridazonanthrone** (ULLMANN and VAN DER SCHALK), A., i, 165.

**Pyridine**, action of, on blood-pigment (KALMUS: v. ZEYNEK), A., i, 95. and lead nitrate, equilibrium in the system (WALTON and JUDD), A., ii, 705. compound of, with carbon tetrabromide, and auribromide (DEHN and DEWEY), A., i, 914. compound of copper benzoate and (BRADY), P., 94. compounds of organic salts of bivalent metals with (GROSSMANN and JÄGER), A., i, 944. compounds of, with tin halides (PFEIFFER, FRIEDMANN, LEHNRADT, LUFTENSTEINER, PRADE, and SCHNURMANN), A., i, 746. salts, chromoisomerism of (HANTZSCH), A., i, 673. methonitrite (NEOGI), T., 1600; P., 208. persulphates, metallic (BARBIERI and CALZOLARI), A., ii, 889. chlorine derivatives of (SELL), T., 1679; P., 220. separation and estimation of ammonia and (DELÉPINE and SORNET), A., ii, 827.

**Pyridine,  $\alpha$ -amino**, synthesis of derivatives of 1:8-naphthyridine from (PALAZZO and TAMBURINI), A., i, 327. 3-bromo-, and 3:5-*dibromo*-, methiodides (DECKER, KAUFMANN, SASSU, and WISLOKI), A., i, 1024. dichloro-, mercurichloride (REITZENSTEIN and BREUNING), A., i, 226. 3:5-dichloro-4-amino-, 3:5-dichloro-4-hydroxy-, and 4:5-dichloro-3-hydroxy- (SELL), T., 1681; P., 221.

**Pyridine ring**, rupture of the (REITZENSTEIN and BREUNING), A., i, 225; (KÖNIG and BAYER), A., i, 399.

**Pyridine series**, pseudo-bases of the (KÖNIG), A., i, 485.

**Pyridinium** nitrite, preparation of (NEOGI), T., 1254; P., 71. osmichloride (GUTBIER and WALBINGER), A., i, 191. platinibromide (GUTBIER, BAURIEDEL, and OBERMAIER), A., i, 33.

rutheni-bromide and -chloride (GUTBIER and LEUCHS), A., i, 183.

**2,3-Pyridinoanthraquinone.** See  $\gamma$ -Anthraquinolinequinone.

**Pyridinoiridiosulphuric acid** and its salts (DELÉPINE), A., i, 81.

**Pyridinoiridopentachlorides**, metallic (DELÉPINE), A., i, 565.

**Pyridylacetycatechol** and its hydrochloride (MANNICH and HÜBNER), A., i, 566.

**Pyridylacetylveratrole** hydrobromide (MANNICH and HÜBNER), A., i, 566.

**Pyrimidines** (JOHNSON and HILL), A., i, 502; (JOHNSON, PECK, and AMBLER), A., i, 575; (JOHNSON and AMBLER), A., i, 576; (JOHNSON and SHEPARD), A., i, 924.

**2-Pyrimidone**, 5:6-diamino-, salts of (JOHNS), A., i, 242.

**6-Pyrimidone-5-acetic acid**, 2-thio-, and its ethyl ester (JOHNSON, PECK, and AMBLER), A., i, 576.

**6-Pyrimidone-5-carboxylic acid**, 2-thio-, (JOHNSON and AMBLER), A., i, 576.

**Pyrites**, chemical constitution of (BENEDEK), A., ii, 44; (PLUMMER), A., ii, 901. crystallography of (POSCHL), A., ii, 208. from Hungary (LIFFA), A., ii, 46. estimation of arsenic in (HATTENSAUR), A., ii, 1028. estimation of copper in (MAJEWSKI), A., ii, 335; (IWANOFF), A., ii, 660.

**Pyrogallol**, compound of, with *p*-benzoquinone (SIEGMUND), A., i, 654.

**Pyrogallol, *dibromo*-, and *tribromo*-** (v. HEMMELMAYR), A., i, 984.

**Pyrogallolcarboxylic acid** trimethyl ether, action of nitric acid on (HARDING), T., 1597; P., 213.

**Pyrogallolcarboxylic acid, *monobromo*-** (v. HEMMELMAYR), A., i, 984.

**Pyrogallol trimethyl ether**, 5-amino-, acetyl derivative (HARDING), T., 1594. 4:6-dinitro-, and 4:5:6-trinitro- (THOMS and SIEBELING), A., i, 724.

**Pyrolusite**, chemical constitution of (BENEDEK), A., ii, 44.

**Pyromellitic acid**, synthesis of (FEIST), A., i, 133.

*iso***Pyromucic acid**, oxidation of (CHAVANNE), A., i, 736.

**Pyronone** synthesis (WEDEKIND, HAUSERMANN, WEISSWANGE, and MILLER), A., i, 219.

**Pyrophosphoric acid**. See under Phosphorus.

**Pyrosols** (LORENZ), A., ii, 379.

**Pyroxene** (SMITH), A., ii, 501.

**Pyroxene minerals**, analyses of (SOSMAN), A., ii, 992.

**Pyrrole** compounds, synthesis of, from imino-acids (JOHNSON and BENGIS), A., i, 564.

**Pyrrole**, nitro-, and its salts (ANGELI and ALESSANDRI), A., i, 397.

**Pyrrole-2-carbanilide** (FISCHER and VAN SLYKE), A., i, 1020.

α-**Pyrrolecarboxyl** chloride (FISCHER and VAN SLYKE), A., i, 1020.

**Pyrrole-2,5-dicarboxylic acid**, 3,4-dichloro- (COLACICCHI), A., i, 225.

α-**Pyrroleglycine** and its ethyl ester (FISCHER and VAN SLYKE), A., i, 1020.

**Pyrrole group**, synthesis in the (ODDO), A., i, 496.

**Pyrrole ring**, β-unsubstituted, reactivity of (KÖNIG), A., i, 808.

**Pyrrolidine ring**, stability of the (v. BRAUN), A., i, 563.

splitting of, by bacteria (ACKERMANN), A., i, 808.

**Pyrrolidone**, 3-hydroxy- (FISCHER and GöDDERTZ), A., i, 20.

5-**Pyrrolidone-2-carboxylic acid**, esters and amide (FISCHER and BOEHNERT), A., i, 485.

**Pyruvic acid**, decomposition of, by ultra-violet light (EULER), A., ii, 452.

lecture experiment to show the fermentation of (NEUBERG and KARZAG), A., ii, 976.

cetyl and phytanyl esters of (WILLSTÄTTER, MAYER and HÜNI), A., i, 146.

brucine salt (HILDITCH), T., 234.

**Q.**

**Quadriurates** (ROSENHEIM), A., i, 403; (KOHLER), A., i, 690; (RINGER), A., i, 1044.

**Quartz**, specific heat of (LASCHTSCHENKO), A., ii, 253.

optical characters of (RINNE and KOBB), A., ii, 209.

effect of pressure on the change of opal into (SPEZIA), A., ii, 497.

**Quartz-mercury lamps**, intensity of ultra-violet light from (HENRI), A., ii, 833.

**Quaternary systems**, composition of solid phases in (BELL), A., ii, 973.

thermal analysis of (PARRAVANO and SIROVICH), A., ii, 973, 1078.

**Quercetin**, amino-, and its salts (WATSON), P., 164.

**Quinaldine**. See 2-Methylquinoline.

**Quinaldinium bases** (VONGERICHTEN and ROTTA), A., i, 677.

**Quinazolines** (BOGERT, BELL, and AMEND), A., i, 162; (BOGERT, GÖRTNER, and AMEND), A., i, 580.

**Quindoline** bromoperbromide, and 10-bromo-, 5,10-dibromo-, and 7-nitroso- (FICHTER and ROHNER), A., i, 85.

**Quindolinecarboxylic acid** (NOELTING and STEUER), A., i, 165.

**Quindolinium nitrite** and 10-bromo-, bromide (FICHTER and ROHNER), A., i, 85.

**Quinhydrone**, preparation of (SIEGMUND), A., i, 654.

constitution of (RICHTER), A., i, 136; (KNORR), A., i, 654.

**Quinic acid**, cupric salts of (PICKERING), T., 177; P., 7.

**Quinidine**, action of sulphuric acid on (PFANNL; PANETH), A., i, 560.

hydrochloride, double salt of, with antimony pentachloride (THOMSEN), A., i, 484.

iso-**Quinidine** and its salts (PFANNL), A., i, 560.

**Quinine**, absorption spectrum of (DOBBIE and FOX), P., 325.

and its isomerides, absorption spectra of (DOBBIE and LAUDER), T., 1254, P., 148.

action of sulphuric acid on (BÖTTCHER and HOROWITZ), A., i, 1011.

and its derivatives, influence of, on trypanosome infection (MORGENROTH and HALBERSTAEDTER), A., ii, 219.

excretion and estimation of (KATZ), A., ii, 1013.

hydrochloride, double salt of, with antimony pentachloride (THOMSEN), A., i, 484.

sulphate, mobility of ions produced in air during hydration of (DE BROGLIE and BRIZARD), A., ii, 356; (DE BROGLIE), A., ii, 573.

ionisation and luminescence produced by heating (DE BROGLIE and BRIZARD), A., ii, 174.

activity and luminescence of (DE BROGLIE and BRIZARD), A., ii, 887.

benzaldehyde sulphite (MAYER), A., i, 224.

diglycolic esters of (BOEHRINGER and SÖHNE), A., i, 1011.

distinction between, and euquinine (ASTRUC and COURTIIN), A., i, 396.

estimation of (COCKBURN and BLACK), A., ii, 944.

estimation of, in cinchona bark (VIGNERON), A., ii, 284.

estimation of, volumetrically in drugs (KATZ), A., ii, 79.

**Quinine alkaloids**, estimation of (JAVILLIER and GUÉRITHAULT), A., ii, 778.

**Quinine esters** of phenylarsinic acid derivatives (OECHSLIN), A., i, 760.

**Quinoketens**, attempts to prepare (STAUDINGER and CLAR), A., i, 638.

**Quinol**, course of chemical change in, under the influence of radiant energy (HARTLEY and LITTLE), T., 1079; P., 137.

a copper compound of (THOMPSON), P., 155.

compound of, with phenazine (ZEREWITINOFF and v. OSTROMISSLENSKY), A., i, 849.

*diisobutyl ether*, nitration of (NIETZKI and KESSELRING), A., i, 39.

methyl ether, *dinitro*, constitution of (REVERDIN and DE LUC), A., i, 965.

**Quinol**, hydroxy-, derivatives of (BARGELLINI and AVRUTIN), A., i, 68; (BARGELLINI), A., i, 305; (BARGELLINI and MARTEGIANI), A., i, 854, 965; (BARGELLINI and AURELI), A., i, 855.

compound of, with *p*-benzoquinone (SIEGMUND), A., i, 654.

3:5-dinitro-, and its 1-monomethyl ether, and their metallic salts (SHAW), T., 1609; P., 98.

**Quinol**, estimation of (PINNOW), A., ii, 339.

**Quinolcarboxylic acid**, hydroxy-, barium salt, and bromohydroxy-, and *di*-bromohydroxy- (v. HEMMELMAYR), A., i, 984.

**Quinoline**, constitution of the  $\psi$ -bases of (KAUFMANN and PLÁ Y JANINI), A., ii, 915.

salts of (HILDITCH), T., 236.

salts, chromoisomerism of (HANTZSCH), A., i, 673.

compound of copper benzoate and (BRADY), P., 94.

salts and compound of, with carbon tetrabromide (DEHN and DEWEY), A., i, 915.

methonitrite (NEOGI), T., 1601; P., 208.

**Quinoline**, 6-amino-, salts and derivatives of (DECKER, KAUFMANN, PFEIFER, PROHATZKA, and ALBERTINI), A., i, 1025.

4-cyano-, methiodide (KAUFMANN, WIDMER, and ALBERTINI), A., i, 749.

6-hydroxy-, absorption spectrum of (DOBBIE and FOX), P., 325.

*iso***Quinoline alkaloids** (HOPE and ROBINSON), T., 2114; P., 265.

syntheses in the group of (HOPE and ROBINSON), T., 1153; P., 125.

**Quinoline colouring-matters** (KAUFMANN, STRÜBIN, ANASTACHEWITCH, POPPER, and SZNAJDER), A., i, 328.

*iso***Quinoline derivatives** (PYMAN), T., 1690; P., 215.

formation of (PICTET and SPENGLER), A., i, 750.

physiological action of (LAIDLAW), A., ii, 220.

"**Quinolinecarbinol**, hydroxy-, new" (COHN), A., i, 567.

**Quinoline-5-carboxylic acid**, preparation of (v. JAKUBOWSKI), A., i, 81.

**Quinolinic acid**, betaine of, and its hydrochloride (KIRPAL), A., i, 157.

**Quinolinium osmichloride** (GUTBIER and WALBINGER), A., i, 191.

platinibromide (GUTBIER, BAURIEDEL, and OBERMAIER), A., i, 33.

**Quinolylacetylveratrole** hydrobromide (MANNICH and HÜBNER), A., i, 566.

**Quinolylenephenyleneketonecarboxylic acid** (NOELTING and HERZBAUM), A., i, 917.

**Quinolylenephenylenemethanecarboxylic acid** (NOELTING and HERZBAUM), A., i, 917.

*p***-Quinone**. See *p*-Benzquinone.

**Quinones** (HAAK), A., i, 135.

condensation products from (LESSER), A., i, 994.

chloroimino- (RAIFORD), A., i, 993.

action of diphenylketen on (STAUDINGER and BEREZA), A., i, 459.

estimation of, volumetrically (KNECHT and HIBBERT), A., ii, 76.

*o***-Quinones**, synthesis of (LIEBERMANN), A., i, 656.

*o***-Quinoneanildiphenylhydrazone**, and *p*-hydroxy-, hydrochlorides (WIELAND and WECKER), A., i, 82.

**Quinonedi-imine**, compound of, with *p*-nitrophenol (KNORR), A., i, 654.

**Quinonedi-imonium** nitrate (PICCARD), A., i, 569.

**Quinone-imides** (MELDOLA and KUNTZEN), T., 1283, 2034; P., 157, 263.

**Quinonoid compounds** (WILLSTÄTTER and CRAMER), A., i, 90, 736; (MADELUNG), A., i, 323; (WILLSTÄTTER and MÜLLER), A., i, 728, 729.

**Quinonoid colouring-matters** (PICCARD), A., i, 568.

*holo*- and *meri*-**Quinonoid salts** of benzidine (PICCARD), A., i, 493.

**Quinotoxine**, oximino-, decomposition of (RABE and MILARCH), A., i, 741.

## R.

**Rabbits**, nephritis in (HARVEY), A., ii, 1013.

**Racemic** compounds, recognition of (VAN DER LINDEN : KRUYER), A., ii, 477.

**Racemic** compounds, application of the phase rule to the recognition of (LADENBURG), A., ii, 265, 707.  
 preparation of optically active poly-peptides from (ABDERHALDEN and GEDDERT), A., i, 842.

**Racemic acid** as an analytical reagent (KLING), A., ii, 539.

**Radishes**, red, the colouring matter of (SACHER), A., ii, 148.

**Radioactivity.** See under Photochemistry.

**Radio-elements**, arrangement of, in the "cubic" periodic system (VAN DEN BROEK), A., ii, 709.

**Radium** content of rocks (BÜCHNER), A., ii, 243.  
 and uranium, ratio between, in minerals (PIRRET and SODDY), A., ii, 454; (GLEITSCH), A., ii, 845.  
 content from borings at Beachville, Ontario (EVE and MCINTOSH), A., ii, 846.  
 content of potassium salts (SATTERLY), A., ii, 243.  
 metallic, attempts to prepare (HERSCHFINKEL), A., ii, 844.  
 units of measurement of (JABOIN), A., ii, 8.  
 production of helium by (BOLTMOOD and RUTHERFORD), A., ii, 953.  
 transport of the active deposit of (WELLISCH), A., ii, 358.  
 influence of the rays of, on the photoelectric sensitiveness of metals (DEMBER), A., ii, 567.  
 new perpetuum mobile for (GREINACHER), A., ii, 684.  
 problems concerning (VERNADSKY), A., ii, 359.  
 and its compounds, probable chemical properties of (DE FORCRAND), A., ii, 172.  
 influence of acids and salts on the amount of emanation liberated from a solution of (EVE and MCINTOSH), A., ii, 841.  
 $\beta$ -rays of (DANYSZ), A., ii, 840.  
 chemical effects of the rays of (LIND), A., ii, 841.  
 direct action of, on ammonia (PERMAN), T., 132; P., 7.  
 introduction of, into the tissues (HARET, DANNE, and JABOIN), A., ii, 418.  
 changes in normal tissues produced by (GRÜNBAUM and GRÜNBAUM), A., ii, 132.

**Radium emanation** (*niton*), relation between atomic weight and viscosity for (RANKINE), A., ii, 87.

**Radium emanation** (*niton*), density and disintegration of (WHYTLAW-GRAY and RAMSAY), A., ii, 173.  
 volatilisation of, at low temperatures (BOYLE), A., ii, 6, 569.  
 solubility of, in organic liquids (RAMSTEDT), A., ii, 842.  
 action of, on thorium salts (HERSCHFINKEL: RAMSAY), A., ii, 843.  
 bactericidal action of (JANSEN and PRYTZ), A., ii, 321.  
 action of, on blood (CHAMBERS and RUSS), A., ii, 809.  
 estimation of (TITOFF), A., ii, 685.  
 amount of, in a spring at Columbières-sur-Orb (DANNE and CRÉMIEU), A., ii, 1049.  
 amount of, in soil and in the atmosphere (JOLY and SMYTH), A., ii, 1048.  
 estimation of, in rocks and minerals (JOLY), A., ii, 685.  
 estimation of, in uranium earths (MARCKWALD and RUSSELL), A., ii, 360.  
 residues, separation of (V. WELSBACH), A., ii, 7.

**Radium-C**, complex nature of (FAJANS and MAKOWER), A., ii, 569.  
 new radiation from (WERTENSTEIN), A., ii, 684.  
 ionisation produced by the  $\beta$ - and  $\gamma$ -rays of (EVE), A., ii, 956.

**Radium-D**,  $\beta$ -rays from (V. BAEYER, HAHN, and MEITNER), A., ii, 567.

**Raffinose**, hydrolysis of (GLOVER), T., 371.

**Rain-water.** See under Water.

**Rats**, tame, volume and growth of the blood in (CHISOLM), A., ii, 1107.

**Rays.** See under Photochemistry.

**Reagent bottles**, method of filling (WALTON), A., ii, 976.

**Rectification tubes**, new (EMMANUEL), A., ii, 256.

**Reduction** and oxidation by catalysis (ZELINSKY and GLINKA), A., i, 870.

**Reflex action** under chloroform (SHERINGTON and SOWTON), A., ii, 753.

**Refractivity.** See under Photochemistry.

**Rennet**, preparations of solutions of, free from pepsin (HAMMARSTEN), A., ii, 998.  
 specific inhibition of different kinds of (HEDIN), A., ii, 998.  
 curdling of milk by (BANG), A., i, 826.

**Rennin** (*chymosin*), identity of, with pepsin (VAN HASSELT), A., i, 248; (PORTER), A., i, 698.  
 in the gastric juice of the calf (RAKOCZY), A., i, 827.

**Rennin** (*chymosin*), and its zymogen, from the calf's stomach (HEDIN), A., ii, 621.

**Resin** from an Egyptian sarcophagus, constituents of (REUTTER), A., i, 897.

from *Picca excelsa* (KÖHLER), A., i, 295.

**Resin acids** (KOHLER), A., i, 295.

**Resin spirit**, detection of, in turpentine oil (GRIMALDI), A., ii, 231.

**$\alpha$ -Resedicarboxylic acid**, position of the substituents in (WATZ), A., i, 541.

**Resorcinol**, formation of iodine derivatives of (GÉRARD), A., i, 289.

compound of, with phenazine (ZEREWITINOFF and v. OSTROMISSLEN-SKY), A., i, 849.

monobenzoate and its nitro-derivatives (KAUFFMANN and KUGEL), A., i, 368.

hydrobromide and hydrochloride (MAASS and MCINTOSH), A., i, 289.

ethyl carbonate of (EINHORN and ROTHLAUF), A., i, 704.

dimethyl ether, amino-, hydrochloride (KAUFFMANN and KUGEL), A., i, 930.

**Resorcinol**, 2:4:6-tribromo-, yellow mercurous salts, and dimethyl ether of (TORREY and HUNTER), A., i, 283, 284.

*di-p*-nitrobenzoylamino- (KYM and KOWARSKI), A., i, 1045.

**Resorcinolanthrone**, dinitro-(SCHARWIN, KUSNEZOFF, NAUMOFF, GANDURIN, BJENKOFF, and DMITRIEFF), A., i, 656.

**Resorcincyl** *di-p*-nitrobenzoate, 4:6-*di*-nitro- (KYM and KOWARSKI), A., i, 1044.

**Respiration** apparatus for estimation of expired carbon dioxide (BENEDICT and HOMANS), A., ii, 408.

and dyspnoea (HOUGH), A., ii, 993.

of mice with carcinoma (CHISOLM), A., ii, 211.

of plants. See Plant respiration.

regulation, by the blood (WINTERSTEIN), A., ii, 211.

action of drugs on (v. ISSEKUTZ), A., ii, 1017.

influence of injected saline solutions on (VERZAR), A., ii, 738.

of air rich in oxygen (BENEDICT and HIGGINS), A., ii, 408.

causes of absorption of oxygen in (DOUGLAS and HALDANE), A., ii, 737.

of oxygen, influence of, on the blood (WARBURG), A., ii, 211, 503.

as affected by body position (EMMES and RICHE), A., ii, 210.

**Respiration**, influence of diet on (BENEDICT, EMMES, and RICHE), A., ii, 211.

influence of exertion of sleep on (AMAR), A., ii, 48.

effect of ice-baths on (LUSK), A., ii, 215.

**Respiratory centre**, excitability of the (LINDHARD), A., ii, 617.

**Retenecarboxylic acid** (LIEBERMANN and ZSUFFA), A., i, 388.

**Rhamnofluorin** (TSCHIRCH and BROMBERGER), A., ii, 528.

**Rhamnose-*o*-carboxyanilide** (IRVINE and HYND), T., 165; P., 9.

**Rhamnosterol** (TSCHIRCH and BROMBERGER), A., ii, 528.

**Rhamnus cathartica**, constituents of the bark of (TSCHIRCH and BROMBERGER), A., ii, 528.

**Rhein**, aloe-emodin and chrysophanic acid, relation between (OESTERLE), A., i, 887.

and its derivatives (TUTIN and CLEWER), T., 951; P., 89.

**Rhein**, *tetranitro*- (LÉGER), A., i, 140.

**Rheinolic acid** and its acetyl derivative (TUTIN and CLEWER), T., 954; P., 89.

**Rhodanic acids**, substituted, and their condensation products (BUTSCHER), A., i, 333.

*epi***Rhodeonic acid**, and its barium salt and lactone (VOTOČEK and KRAUZ), A., i, 179.

**Rhodeose**, stereochemical configuration of (HUDSON), A., i, 355.

*iso***Rhodeose** (VOTOČEK), A., i, 354.

*epi***Rhodeose** and its methylphenylhydrazone (VOTOČEK and KRAUZ), A., i, 179.

**Rhodium**, electrical properties of (BRONIEWSKI and HACKSPILL), A., ii, 1055.

*tri*- and hydroxy-bromides and *tri*-iodide (GOLOURKINE), A., ii, 45.

**Rhodizite** from pegmatites of Madagascar (DUPARC, WUNDER, and SABOT), A., ii, 1105.

**Rhubarb**, constituents of (TUTIN and CLEWER), T., 946; P., 89.

occurrence of alizarin in (MULLER), T., 967; P., 101.

**d-Ribose**, hexoses from (LEVENE and JACOBS), A., i, 14.

**Rice**, value of, as a food (ARON and HOCSOM), A., ii, 625.

haemolytic action of the fat of (SHIMAZONO), A., i, 765.

**Ricinoleic acid**, aromatic acyl esters of (VEREINIGTE CHININFABRIKEN ZIMMER & CO.), A., i, 107.

**Riebeckite**, a variety of, from Mysore (SMEETH), A., ii, 737.

**Riebeckite** from Quincy pegmatite (PALACHE and WARREN), A., ii, 615.

**Ring**, six-carbon, attempts to form a (SACHS and BRIGL), A., i, 719.

**Rinneite**, composition and occurrence of (RINNE and KOLB), A., ii, 613.

**Rocks**, radioactivity of (GOCKEL), A., ii, 174.

radium content of (BÜCHNER), A., ii, 243; (JOLY), A., ii, 685.

**Röntgen rays.** See under Photochemistry.

"**Romauxankalk**" in animal metabolism (HAGEMANN), A., ii, 507.

**Roots**, excretion of substances by (MAZÉ), A., ii, 324.

asparagus, constituents of (MORSE), A., ii, 324.

**Rotation.** See under Photochemistry.

**Rotatory dispersion.** See under Photochemistry.

**Rubber.** See Caoutchouc.

**Rubidium**, rays of (HENRIOT), A., ii, 571.

magnesium chromate (BARKER), T., 1327; P., 198.

fluoride, hydrates of (DE FORCRAND), A., ii, 603.

lanthanum acid nitrate (JANTSCH and WIGDOROW), A., ii, 114.

neodymium and praseodymium nitrates (JANTSCH and WIGDOROW), A., ii, 115.

rhodobromide (GOLOUBKINE), A., ii, 45.

**Rubies**, artificial, analysis of (CERERO and BAYO), A., ii, 824.

**Rue.** See *Peganum harmala*.

**Mufgalol** hexamethyl ether (FISCHER, GROSS, and NEBER), A., i, 887.

**Ruminants**, digestion in (MARKOFF), A., ii, 810.

**Rumpfite**, analysis of (GROSSPIETSCH), A., ii, 808.

**Ruthenium**, alkylammonium derivatives of (GUTBIER and LEUCHS), A., i, 183.

## S.

**Sabinene**, reduction of (TSCHUGAEFF and FOMIN), A., i, 72.

**Saccharic acid**, behaviour of, in the organism (SCHOTT), A., ii, 514.

cupric salts of (PICKERING), T., 175; P., 7.

"**Saccharin**" (*o-benzoic sulphinide*), detection of (COMANDUCCI), A., ii, 80.

See also *o*-Benzoic sulphinide.

**Saccharin**, viscosity of solutions of (ORTH), A., ii, 1026

**Saccharinic acids** (KILIANI), A., i, 111.

*apo***Safranine**, isomerides of (KEHRMANN and RIERA Y PUNTI), A., i, 926; (KEHRMANN and MASSLENIKOFF), A., i, 927.

*isoapo***Safranine**, salts of (KEHRMANN and RIERA Y PUNTI), A., i, 927.

**Safraines**, synthesis of (ORLOFF), A., i, 89.

*iso***Safrole**, dehydration of the glycol of (PAOLINI), A., i, 779.

**Salicylaldehyde** hydrobromide (PFEIFFER, FRIEDMANN, GOLDBERG, PROS, and SCHWARZKOPF), A., i, 791.

brucine sulphite (MAYER), A., i, 223.

**Salicylaldehydedipiperidil** (PAULY, SCHÜBEL, and LOCKEMANN), A., i, 788.

**Salicylaldehyde-p-methoxyphenylhydrazone** (PADOA and SANTI), A., i, 1030.

**Salicylamide**, condensation of acetyl chloride with (TITHERLEY and HICKS), T., 866; P., 102.

**Salicylbenzamidine** and its hydrochloride (TITHERLEY and HUGHES), T., 1499; P., 190.

**Salicyldiphenylbenzamidine** (TITHERLEY and HUGHES), T., 1504.

**Salicylethylbenzamidine** (TITHERLEY and HUGHES), T., 1502.

**Salicylhydrobromoquinine** (VEREINIGTE CHININFABRIKEN ZIMMER & Co.), A., i, 559.

**Salicylic acid**, action of, on acids of the rare metals (MULLER), A., ii, 940.

bismuth salt, assay of (CARON and RAQUET), A., ii, 667.

basic bismuth salt of (NYMAN and BJÖRKSTÉN), A., i, 449.

sodium salt, crystallisation of (HILL), A., i, 53.

yttrium salt (PRATT and JAMES), A., ii, 893.

ethyl ester, carbonic acid esters of (EINHORN and ROTHLAUF), A., i, 704.

$\beta$ -chloroethyl and glycol esters of (BOEHRINGER & SÖHNE), A., i, 130.

**Salicylic acid, dithio-(*o*-hydroxyphenylcarbithionic acid)** (BLOCH, HÖHN, and BUGGE), A., i, 46.

and its salts and esters (HÖHN and BLOCH), A., i, 49.

**Salicylic acid**, detection of (WILKIE), A., ii, 547; (MCCRAE), A., ii, 1142.

estimation of, in fruit juices (VIERHOUT), A., ii, 775.

**Salicylidene-p-aminobenzhydrol** (TORREY and PORTER), A., i, 340.

**Salicylidene-p-aminobenzophenone** (TORREY and PORTER), A., i, 340.

**3-Salicylideneamino-2-methyl-4-quinazolone** and its derivatives (BOGERT, BELL, and AMEND), A., i, 163.

**α-Salicylideneamino-α-phenylacetamide** (CLARKE and FRANCIS), T., 321.

**3-Salicylideneamino-2-styryl-4-quinazolone** (BOGERT, BELL, and AMEND), A., i, 163.

**Salicylidene-N-methylbenzidine** (RASSOW and BERGER), A., i, 821.

**Salicymethylbenzamidine** (TITHERLEY and HUGHES), T., 1501.

**o-Salicyloxybenzoyl** chloride (BOEHINGER & SÖHNE), A., i, 987.

**Salicylphenylacetamidine** (TITHERLEY and HICKS), T., 869; P., 102.

**Saliva**, alkaline odour of (v. FREY), A., ii, 129.

**Salt**, magnetic, changes in the concentration of a solution of a, in a non-homogeneous magnetic field (VOIGT and STATESCU), A., ii, 578.

**Salts**, capillary rise of (SKRAUP, v. BIEHLER, LANG, PHILIPPI, and PRIGLINGER), A., ii, 21.

dehydration of (LECOQ DE BOISBAUDRAN), A., ii, 270.

emission of positive ions from heated (RICHARDSON), A., ii, 1051.

ionisation of the vapour of, in a flame (MOREAU), A., ii, 455, 686.

conductivity and ionisation of (HUNT), A., ii, 688.

electrical conductivity of the vapours of (SCHMIDT), A., ii, 788.

surface tension of solutions of, in alcohol (CEDERBERG), A., ii, 189.

molecular complexity of, in phenol (HARTUNG), A., ii, 697.

behaviour of, in solution (COLSON), A., ii, 710.

solubility of, in the corresponding acids (MASSON), T., 1132; P., 125.

sparingly soluble, solubility of (PRUD'HOMME), A., ii, 1073.

effect of, on the solubility of other salts (NOYES and BRAY: NOYES, BOGGS, FARRELL, and STEWART), A., ii, 1074; (BRAY and WINNINGHOFF: BRAY), A., ii, 1075.

heterogeneously magnetic solutions of, in a heterogeneous magnetic field (STATESCU), A., ii, 850.

antagonistic action of (LOEB), A., ii, 1018.

antagonistic action and toxicity of (LOEB), A., ii, 221.

antagonism of the toxic action of acids by (LOEB and WASTENEYS), A., ii, 755.

**Salts**, diffusion of, through plant organs (ANDRÉ), A., ii, 760.

complex, magnetism of (FEYTIS), A., ii, 367.

double, formation of (FOOTE), A., ii, 393; (FOOTE and HAIGH), A., ii, 397; (FOOTE and WALDEN), A., ii, 726.

formed from alkali sulphates and sparingly soluble sulphates (BARRE), A., ii, 979.

double halogen, solutions of, in water and ether (MARSH), P., 328.

fused, electrolytic valve action in (SCHULZE), A., ii, 790.

hydrated, dissociation of (ROLLA), A., ii, 375.

water of crystallisation in (BAKER and ADLAM), T., 507; P., 17.

determination of the dissociation pressure of (PARTINGTON), T., 466; P., 45.

inorganic, absorption of light by (HOUSTOUN: HOUSTOUN and BROWN), A., ii, 785; (HOUSTOUN and ANDERSON), A., ii, 786.

neutral, adsorption of (LACHS and MICHAELIS), A., ii, 190, 1069.

penta- and hexa-ionic, conductivity and ionisation of (NOYES and LOMBARD), A., ii, 864.

qualitative analysis of complex mixtures of (MOREAU), A., ii, 331.

**Salt gardens**, mother liquors of (SCHLÖSSING), A., ii, 392.

**Saltpetre**, Chili. See Sodium nitrate.

**Salt solutions**, properties of, in relation to the ionic theory (NOYES and FALK), A., ii, 861.

gelatinisation and hydration of (v. WEIMARN), A., ii, 866.

“**Salvarsan**” (diaminodihydroxyarsenobenzene hydrochloride), titration of, with iodine solutions (GAEBEL), A., ii, 676.

detection of, and its distinction from other forms of arsenic (GAEBEL), A., ii, 448.

**Samarium** ammonium molybdate (BARRIERI), A., ii, 291.

**Samarakite** from Madagascar (LACROIX), A., ii, 296.

from Madras (TIPPER), A., ii, 1105.

**Sandalwood oil**, constituents of (SCHIMMEL & CO.), A., i, 894.

**Sandmeyer's reaction** (HELLER and TISCHNER), A., i, 243.

**Santalim**, copper salt of (BROOKS), A., i, 553.

**Santene** and its derivatives (KONDAKOFF), A., i, 998.

*Santolina chamaecyparissus*, constituents and derivatives of the essential oil of, and the action of hydroxylamine on it (FRANCESCONI and SCARAFIA), A., i, 1001.

**Saponin**, extraction of, from *Trevesia sundaica* leaves (FLIERINGA), A., i, 480.

influence of, on the toxicity of digitoxin (POSTOÉEFF), A., ii, 1016.

detection of, by various reactions (REICHARD), A., ii, 235.

**Saponins** (KOBERT), A., i, 898.

**Sapphires**, oriental, colour of (VERNEUIL), A., ii, 43.

**Sarcosinedithiocarboxylic acid**, benzyl hydrogen ester, and its barium salt (SIEGFRIED and WEIDENHAUPT), A., i, 117.

**Sawdust**, preparation of oxalic acid from (v. HEDENSTRÖM), A., i, 767.

**Scandium** in orthite (MEYER), A., ii, 406.

**Scapolite group**, chemical and physical characters of the (HIMMELBAUER), A., ii, 297.

**Scatole** (3-methylindole), behaviour of, in rabbits (BLUMENTHAL and JACOBY), A., ii, 58.

detection of (SASAKI), A., ii, 80.

**Schardinger's reaction** in cow's milk (REINHARDT and SEIBOLD), A., ii, 418.

**Schaumopal**. See Floatstone.

**Schenck's law** (BERNOULLI), A., ii, 363.

**Schiff's bases**, preparation of (PORAKOSCHITZ, AUSCHKAP, and AMSLER), A., i, 688.

**Schinus molle** oil (LALOUE), A., i, 138.

**Schwartzembergite** (SMITH and PRIOR), A., ii, 1100.

**Scocelite** (SMITH), A., ii, 501.

**Scopoletin**, constitution of (MOORE), T., 1043; P., 119.

**Scopolia japonica**, constituents of (WATANABE), A., ii, 427.

**Sealed-tube reactions**, detection of gas in (WARREN), A., ii, 925.

**Sea-urchin's eggs**. See Eggs.

**Sea-water**. See under Water.

**Secale**, constituents of extract of (ENGELAND and KUTSCHER), A., ii, 528.

**Secale cornutum**, extraction of clavicepsin from (MARINO-ZUCO and PASQUERO), A., i, 1003.

**Secretin**, presence of, in foetal life (PRINGLE), A., ii, 745.

**Sedimentation tube**, for microscopic analysis (SCHWABE) A., ii, 651.

**Seeds**, induced germination of (MAZÉ), A., ii, 141.

effect of heating soil on the germination of (FLETCHER), A., ii, 530.

**Seeds**, carbohydrates in (SCHULZE and PFENNINGER), A., i, 17.

phosphorus compounds from (VORBRODT), A., i, 263.

variation in the amounts of phosphorus compounds in (LEWONIEWSKI), A., ii, 641.

ripening, protein formation in (SCHULZE), A., ii, 322.

**Selenite**, rate of dissolution of, at each crystalline surface (TOKŁOCZKO), A., ii, 24.

**Selenites** and **Selenious acid**. See under Selenium.

**Selenium**, preparation of colloidal solutions of (POCHETTINO), A., ii, 597.

equilibrium of mixtures of, with antimony (PÉLALON), A., ii, 899.

salts, action of, on red blood-corpuscles (JONES), A., ii, 1108.

boride, preparation of (HOFFMANN), A., ii, 721.

**Selenites**, anhydrous (ESPIL), A., ii, 279.

**Selenious acid**, action of, on manganese dioxide (MARINO and SQUINTANI), A., ii, 608.

**Seltzer water**, action of, on lead, tin and antimony (BARILLE), A., ii, 889.

**Semicarbazide**, action of nitrous acid on (HOFMANN, HOCK, and KIRMREUTHER), A., i, 359.

action of, with cyclic nitrosochlorides (RUPE and ALtenBURG), A., i, 72.

**Semicarbazidecarboxylic acid**, thio- $\alpha$ -ethyl ester (BUSCH and LIMPACH), A., i, 689.

**Semicarbazones** (HEILBRON and WILSON), P., 315.

conversion of azines into (KNÖPFER), A., i, 1033.

**Senecio alkaloids**, toxicity of (CUSHNY), A., ii, 912.

**Separating apparatus**, new (BOLLAND), A., ii, 385.

for heavy liquids (ATKINSON), A., ii, 105.

**Serological studies** (ABDERHALDEN and PINCUSOHN), A., ii, 410; (ABDERHALDEN and RATHSMANN: ABDERHALDEN and KÄMPF), A., ii, 505; (ABDERHALDEN and SCHILLING), A., ii, 513.

**Serpentine** from the Urals (DUPARC and WUNDER), A., ii, 405.

**Serum**, calcium-content of (RONA and TAKAHASHI), A., ii, 302.

effect of ultra-violet light on (SCOTT), A., ii, 997.

behaviour of chloride in (RONA), A., ii, 50.

fat-splitting power of (ARDERHALDEN and RONA), A., ii, 1108.

**Serum**, estimation of chlorine in (RONA), A., ii, 126.  
 action of, on diastases (WOHLGEMUTH), A., ii, 743.  
 hydrolysis of esters and fats by (RONA and MICHAELIS), A., ii, 302.  
 esterase and nuclease content of, in insanity (PIGHINI), A., ii, 632.  
 estimation of oxyproteic acids in (CZERNECKI), A., ii, 302.

**Serum-albumin**, denaturation of (MICHAELIS and RONA), A., i, 90.

**Serum globulin**, refractive index of (ROBERTSON), A., i, 341.

**Serum reactions**, chemical dynamics of (MCKENDRICK), A., ii, 618.  
 antiprotein, mechanism of (WEIL and SPÁT), A., ii, 618.

**Sewage**, use of, in agriculture (MÜNTZ and LAINÉ), A., ii, 764.  
 purification of (MÜNTZ and LAINÉ), A., ii, 639.  
 loss of nitrogen during the purification of (MÜNTZ and LAINÉ), A., ii, 421.  
 estimation of dissolved oxygen and of nitrates in (CLARKE), A., ii, 928.

**Sewer-gas**, poisoning by (GÖHLICH), A., ii, 221.

**Sex**, relation of, to metabolism (KRAUSE and CRAMER), A., ii, 752.

**Silica**. See under Silicon.

**Silicates**. See under Silicon.

**Silicides**, crystallography of (DE SCHULTEN), A., ii, 486.

**Silicofluorides**, detection of (BROWNING), A., ii, 1030.

**Silicols**, tertiary, preparation of (KIPPING and HACKFORD), T., 138; P., 8.

**Silicomethane**, bromo-, and dibromo- (BESSON and FOURNIER), A., ii, 38.

**Silicon**, amorphous (CAMBI), A., ii, 600.  
 octa- and deca-bromides (BESSON and FOURNIER), A., ii, 38.  
 chlorobromides and chloroiodides of (BESSON and FOURNIER), A., ii, 280.

**Silicon alloys** with carbon and iron (GONTERMANN), A., ii, 1091.  
 with metals (FRILLEY), A., ii, 879.

**Silicon dioxide (silica)** and alumina in allophane, halloysite and montmorillonite (THUGUTT), A., ii, 210; (STREMME), A., ii, 406.  
 equilibrium of, calcium and aluminium oxides (SHEPHERD, RANKIN, and WRIGHT), A., ii, 725.  
 mixtures of manganese oxide with (DOERINCKE), A., ii, 608.  
 sulphides (CAMBI), A., ii, 601.

**Silicic acid**, structure of the gel of (ZSIGMONDY), A., ii, 880.

**Silicon** :—  
**Silicic acid**, colloidal, preparation of (EBLER and FELLNER), A., ii, 723.  
 history of (WALDEN), A., ii, 1086.  
 coagulation of (PAPPADÀ), A., ii, 1077.

**Silicates**, formation of, in binary systems (VAN KLOOSTER), A., ii, 111.  
 constitution of complex (SINGER), A., ii, 979.  
 thermochemistry of the (DITTLER), A., ii, 96  
 mean specific heat of fused and crystallised (SCHULZ), A., ii, 1059.  
 hydrothermal (BAUR and BECKE), A., ii, 991.  
 fusion of (LEBEDEFF), A., ii, 604.  
 decomposition of, by pure water (VAN DER LEEDEN), A., ii, 299.  
 molten, absolute viscosity of (DOELTER and SIRK), A., ii, 880.  
 detection of (BROWNING), A., ii, 1030.  
 analysis of (RUPP and LEHMANN), A., ii, 658.  
 micro-chemical analysis of (CANAVAL), A., ii, 1029.  
 estimation of ferrous iron in (DITTRICH), A., ii, 543.  
 estimation of fluorine in (KLEINSTÜCK), A., ii, 1026.

**Silicon organic compounds** (KIPPING and HACKFORD), T., 138; P., 8.

**Silicon**, estimation of, in iron containing graphite (REICHARD), A., ii, 929.  
 estimation of, in vanadium and molybdenum and in their iron alloys (TRAUTMANN) A., ii, 538.

**Silicotungstic acid**, atropine, coniceine and sparteine salts of (JAVILLIER), A., i, 152.

**Silk**, composition of (STRAUCH), A., i, 511.  
 composition of different kinds of (ABDERHALDEN), A., i, 1050.  
 Indian Tussore, amino-acids from (STRAUCH), A., i, 511.

**Silver**, atomic weight of (BAXTER), A., ii, 112.  
 spectrum of (KASPER), A., ii, 831.  
 arc spectrum of (DUFFIELD), A., ii, 350.  
 electrolytic deposition of (HUGHES and WITHROW), A., ii, 154.  
 an allotropic form of (PALITSCH), A., ii, 724.  
 colloidal forms of (LÜPPO-CRAMER), A., ii, 394.  
 hydrosols, absorption of light by (PIHLBLAD), A., ii, 1043.

**Silver**, extraction of, from its ores (KÜHN), A., ii, 884.  
 the system tin, lead and (PARRAVANO), A., ii, 281.  
 zinc and lead, equilibrium in the system (KREMMANN and HOFMEIR), A., ii, 884.  
 and lead halogen salts, ternary systems of (MATTHES), A., ii, 476.  
 compounds of, with cadmium (PETRENKO and FEDOROFF), A., ii, 800.  
 staining, histological, colloidal chemistry of (LIESEGANG), A., ii, 971.  
 combination of the halogens with finely divided (KASTLE), A., ii, 481.

**Silver alloys** with cadmium (PETRENKO and FEDOROFF), A., ii, 281.  
 with calcium (BAAR), A., ii, 611.  
 with copper and gold (JÄNECKE), A., ii, 1089.  
 with magnesium, electrical conductivity and hardness of (SMIRNOFF and KURNAKOFF), A., ii, 888.  
 with mercury, relation of the conductivity of, to temperature (CALVO), A., ii, 574.  
 with mercury and tin (JOYNER), T., 195; P., 5.  
 with zinc and lead, potential of (KREMMANN and HOFMEIR), A., ii, 848.

**Silver coulometer**, use of silver fluoride in the (EISENREICH and FOERSTER), A., ii, 461.

**Silver chloride**, mixed crystals of, with sodium chloride (BOTTA), A., ii, 293.  
 constitution of the compound of, with ammonia (STRAUB), A., ii, 883.  
 fluorides (VANINO and SACHS), A., ii, 884.  
 iodide, absorption of ultra-violet light by (SCHELL), A., ii, 831.  
 equilibrium diagram of (TAMMANN), A., ii, 195.  
 mercuric iodide, uniformity of (WEGELIUS), A., ii, 884.  
 photohalides (REINDERS), A., ii, 39, 490; (LIESEGANG), A., ii, 39; (TRIVELLI), A., ii, 281; (SICHLING), A., ii, 680; (BAUR), A., ii, 681.  
 nitrate, action of, with potassium ferricyanide and ammonia or amines (GASTALDI), A., i, 185.  
 reaction of, with iodoacetonitrile (LOY and ACREE), A., i, 360.  
 interaction of, with potassium persulphate and its catalytic effect in oxidation of organic substances (AUSTIN), T., 262; P., 24.

**Silver nitrite**, decomposition of, by heat (OSWALD), A., ii, 281.  
 and gold telluride, new (GASTALDI), A., ii, 901.

**Silver**, assay of, by the touchstone (STEINMANN), A., ii, 658.  
 estimation of (DUTOIT and v. WEISSE), A., ii, 1137.  
 estimation of, by electro-deposition (GOOCH and FEISER), A., ii, 227; (BENNER and ROSS), A., ii, 770.  
 estimation of, in copper ores (LOEVY), A., ii, 338.

**Sinigrin**, saponification of (GONNERMANN), A., i, 139.

**Skin**, influence of lecithin on absorption by the (BORSCHIM), A., ii, 1007.

**Smithsonite**, synthesis of (PIOLTI), A., ii, 902.

**Snake**, North American clapper, crotalotoxin from the (FAUST), A., ii, 317.

**Snowdrop**. See *Galanthus nivalis*.

**Soap**, constitution of, in solution (BOWDEN), T., 191; P., 5.  
 solutions, constitution of (MCBAIN and TAYLOR), A., i, 349.  
 density of (CORNISH), A., i, 348.

**Soaps**, production of technical (LEIMDÖRFER), A., ii, 794.  
 estimation of glycerol in (BEYTHIEN, HEMPEL, SIMMICH, SCHWERDT, and WIESEMANN), A., ii, 774.

**Sodamide**, action of hydrazine hydrate on (STOLLE), A., ii, 201.  
 action of ketones with (HALLER and BAUER), A., i, 726.

**Sodium**, metallic, action of, on hydrazine hydrate (SCANDOLA), A., ii, 279.  
 action of, on mercury (KAHLENBERG and KLEIN), A., ii, 723.  
 and potassium, action of, on water (BANERJEE), A., ii, 109.  
 and potassium compounds, isomorphism of (SOMMERFELDT), A., ii, 38.  
 and potassium salts, antagonism in the toxicity of (LOEB and WASTENEYS), A., ii, 420.  
 vapour, influence of neutral gases on the absorption of (FREDENHAGEN), A., ii, 1043.

**Sodium alloys** with gold (MATHEWSON), A., ii, 732.

**Sodium bismuthide** (VOURNASOS: LEBEAU), A., ii, 405.  
 diborate, technical preparation of (LEVI and GARAVINI), A., ii, 981.  
 rhodobromide (GOLOUBKINE), A., ii, 45.

**Sodium carbonate**, solubility of (KETNER), A., ii, 603.

**Sodium** carbonate and hydrogen carbonate, reciprocal solubility of, in water (DE PAEPE), A., ii, 489; (HERZEN), A., ii, 724.  
 hydrogen carbonate and water, equilibrium in the system (McCoy and TEST), A., ii, 379.  
 and sulphate, calcium carbonate and sulphate, equilibrium between (HERZ), A., ii, 794.  
 efflorescence of crystals of (CUMMING), A., ii, 111.  
 action of, on calcium carbonate (OECHSNER DE CONINCK), A., ii, 396.  
 action of, on sugar solutions (JOLLES), A., i, 421.  
 hydrogen carbonate, dissociation pressure of (CAVEN and SAND), T., 1359; P., 147.  
 potassium carbonates (OSAKA), A., ii, 723.  
 chlorate, circular double refraction (MESLIN), A., ii, 679.  
 chloride, crystal-habit of (RITZEL), A., ii, 488.  
 electrolysis of (PETERS), A., ii, 1136.  
 conductivity of, and of its mixtures with hydrochloric acid (BRAY and HUNT), A., ii, 688.  
 depression of the freezing point of, and calcium chloride (LAMPTON-LOUGH), A., ii, 581.  
 mixed crystals of, with silver chloride (BOTTA), A., ii, 293.  
 and sulphate, copper chloride and sulphate, and water, the system (SCHREINEMAKERS and DE BAAT), A., ii, 38; (SCHREINEMAKERS), A., ii, 592.  
 mercury, and nickel or platinum, reactions in the system (PETERS), A., ii, 1095.  
 decomposition of (VOURNASOS), A., ii, 392.  
 action of solutions of, on iron (FRIEND and BROWN), T., 1302; P., 156.  
 and potassium chloride in food (BIERNACKI), A., ii, 633.  
 influence of, on the toxic action of potassium chloride (LOEN and WASTENEYS), A., ii, 517, 756.  
 action of injections of (WILENKO), A., ii, 1015.  
 chromate, use of the transition temperatures of, in thermometry (RICHARDS and KELLEY), A., ii, 695.  
 hydroxide, action of, on tricalcium phosphate (OECHSNER DE CONINCK), A., ii, 396.

**Sodium** hydroxide, action of, on sugar solutions (JOLLES), A., i, 421.  
 and potassium nitrates, heat of solution of fused mixtures of (v. ZAWIDZKI and SCHAGGER), A., ii, 257.  
 nitrate, estimation of, by the "nitron" method (RADLBERGER), A., ii, 69.  
 trinitride, corrosion of metals in (TURRENTINE), A., ii, 693.  
 peroxide, heat of combination of acidic oxides with (MIXTER), A., ii, 966.  
 action of, on bismuth salts (HANUS and KALLAUNER), A., ii, 404.  
 hydrochloride, formate, benzoate, and ethyl acetate (JAUBERT), A., ii, 489.  
 phosphate, discharge of positive ions from heated (HORTON), A., ii, 246.  
 hydrogen phosphate, standardisation of acids by (PRIDEAUX), A., ii, 1129.  
 barium phosphate (QUARTAROLI), A., ii, 489.  
 hypophosphite, action of, on copper sulphate in aqueous solution (FIRTH and MYERS), T., 1329; P., 139.  
 metasilicate, fusion temperature of (JAEGER), A., ii, 981.  
 sulphide, mixed crystals of, and potassium sulphate (NACKEN), A., ii, 109.  
 sulphite and hydrogen sulphite, action of, on azo-dyes (LEPETIT and LEVI), A., i, 930.  
 hyposulphite, conductivity and dissociation of, compared with analogous sulphur-oxygen compounds (JELLINEK), A., ii, 362.  
 thiosulphate as a standard in alkalimetry (FELD), A., ii, 769.  
 fused, as a cryoscopic solvent (BOUTARIC), A., ii, 1060.  
 paratungstate, use of, in fusion of carbonates and nitrates (GOOCH and KUZIRIAN), A., ii, 657.

**Sodium organic compounds:**—  
 cyanamide, oxidation of (LIDOFF), A., i, 618.  
 ethoxide, action of hydrogen sulphide on (RULE), T., 558; P., 60.  
 manganitartrate (JOB and GOISSEDET), A., i, 176.

**Sodium**, microchemical detection of (LENZ and SCHOORL), A., ii, 439.  
**Soils**, dihydroxystearic acid in (SCHREINER and LATHROP), A., ii, 923.  
 influence of, on local atmospheric radioactivity (SANDERSON), A., ii, 846.

**Soils**, effect of heating, on the growth of plants and the germination of seeds (FLETCHER), A., ii, 530.  
 effect of lime and humus on the properties of (THAER), A., ii, 648.  
 influence of, on the root development of wheat and barley (POLLE), A., ii, 224.  
 acids in (SCHREINER and SHOREY), A., ii, 147.  
 production of acids and alkalis in (HALL and MILLER), A., ii, 429.  
 aluminium silicate minerals in (VAN DER LEEDEN), A., ii, 299.  
 bacteriology of (HEINZE), A., ii, 320.  
 injurious bacteria in (EMMERICH, ZU LEININGEN, and LOEW), A., ii, 430.  
 barium in (FAILYER), A., ii, 146.  
 biological-chemical processes in (MOSER), A., ii, 530.  
 addition of carbohydrates to (HUTCHINSON and MARR), A., ii, 430.  
 cholesterol in (SCHREINER and SHOREY), A., ii, 327.  
 manganese in (CONTINO), A., ii, 649.  
 chemical nature of organic nitrogen in (JODIDI), A., ii, 820.  
 ammonia and nitrate formation in (LIPMAN, BROWN, and OWEN), A., ii, 649.  
 relation of the nitrate content of, to non-leguminous plants (LYON and BIZZELL), A., ii, 1025.  
 organic compounds in (SCHREINER and SHOREY), A., ii, 147.  
 oxidation in (SCHREINER, SULLIVAN, and REID), A., ii, 146.  
 pentosans in (SHOREY and LATHROP), A., ii, 146.  
 phosphoric acid in (SEWERIN), A., ii, 61 ; (POUGET and CHOUCHAK), A., ii, 145 ; (PETIT), A., ii, 649.  
 transformation of phosphates in (STOKLASA), A., ii, 429.  
 effect of soluble salts on the adsorption of phosphates by (PATTEN), A., ii, 1128.  
 products of protein cleavage in (SCHREINER and SHOREY), A., ii, 65.  
 arable, production of nitrates in (KOCHE), A., ii, 922.  
 estimation of colloids in (KÖNIG, HASENBÄUMER, and HASSSLER), A., ii, 1033.  
 peat, constituents of (ROBINSON), A., ii, 431.  
 estimation of the methoxyl group in (SHOREY and LATHROP), A., ii, 327.  
 estimation of nitrogen in (MIRSCHERLICH and MERRES), A., ii, 68.

**Soils**, estimation of phosphoric acid in (KASERER and GREISENEGGER), A., ii, 152 ; (PASSERINI), A., ii, 535.  
 estimation of sulphuric acid in (DE SORNAY), A., ii, 1027.  
 estimation of weathered constituents of (HISSINK), A., ii, 443.  
**Soil humus**, biological stimulative action of (REMY and RÖSING), A., ii, 758.  
**Solanaceæ**, active constituents of Indian (ANDREWS), T., 1871 ; P., 248.  
**Solanidine** from *Solanum sodomæum* and its salts and derivatives (ODDO, FERRARI, and MONETA), A., i, 671.  
**Solanine** extracted from *Solanum sodomæum* and its salts and deca-acetyl derivative (ODDO and CESARIS), A., i, 670.  
**Solanol** (ODDO and CESARIS), A., i, 671.  
**Solanum dulcamara**, fruit of (ANDERSON), A., ii, 762.  
**Solanum sodomæum**, solanum and solanidine extracted from (ODDO and CESARIS), A., i, 670 ; (ODDO), A., i, 671.  
**Solid** solutions. See **Solutions, solid**.  
**Solids**, energy content of (NERNST), A., ii, 964.  
 specific heats of, at low temperatures (BARSCHALL), A., ii, 580.  
 molecular weight and viscosity of (BINGHAM), A., ii, 372.  
 viscosity and fluidity of suspensions of finely-divided, in liquids (BINGHAM and DURHAM), A., ii, 968.  
 surface areas of finely-divided combustible (LANG and LLOYD), P., 161.  
 homogeneous, determination of density of, by the "floating" method (ANDREAE), A., ii, 469.  
 with monatomic molecules, relation between the elasticity and specific heat of (EINSTEIN), A., ii, 186.  
 molecular vibrations of (STEIN), A., ii, 84.  
**Solubility** (BRITISH ASSOCIATION REPORTS), A., ii, 794.  
 influence of (HERZ), A., ii, 261.  
 effect of salts on the, of other salts (NOYES and BRAY : NOYES, BOGGS, FARRELL, and STEWART), A., ii, 1074 ; (BRAY and WINNINGHOFF : BRAY), A., ii, 1075.  
**Solubility coefficients**, determination of, by aspiration (JONES), T., 392 ; P., 21.  
**Solubility product**, constancy of the ionic (KENDALL), A., ii, 474.  
**Solute**, volume of a, in solution (TYRER), T., 871 ; P., 96.  
**Solution**, variation of distribution of substances in (DE KOLOSSOVSKY), A., ii, 705.

**Solution**, volume of a solute in (TYRER), T., 871; P., 96.

**Solutions** (VOLCHONSKY : HERZOG), A., ii, 23; (SCHWERS), A. ii, 92.

theory of (GAY : GARVER), A., ii, 192; (WASHBURN), A., ii, 862; (COLSON), A., ii, 1071.

dynamical theory of (SUTHERLAND), A., ii, 703.

contribution to the thermodynamic theory of (HARDMAN and PARTINGTON), T., 1769; P., 221.

influence of affinity in (RÓZSA), A., ii, 1073.

volume changes in formation of (WOLFF), A., ii, 968.

studies of the processes operative in (WORLEY), T., 349; (GLOVER), T., 371, 379.

conductivity of, in acetic and propionic acids (SACHANOFF), A., ii, 689, 691.

influence of temperature and pressure on the electrolytic conductivity of (LUSSANA), A., ii, 462; (KÖRBER), A., ii, 863.

adsorption of (MARC), A., ii, 258; (SCHMIDT), A., ii, 969.

calculation of the specific heat of (PASCHKY), A., ii, 851.

equilibria and potentials of, separated by membranes, in presence of non-dialysing electrolytes (DONNAN), A., ii, 848.

composition and vapour tension of (VREVKY), A., ii, 256.

origin of internal pressure in (POLOWZOFF), A., ii, 101.

migration of, through the lymph spaces (MELTZER), A., ii, 220.

in acetone, electrochemistry of (ROSHDESTWENSKY and LEWIS), T., 2138; P., 266.

binary, influence of substitution in the components on the equilibrium of (KREMMANN, DISCHENDORFER, FRANKOVIC, HAUSER, HÖNEL, SCHOULZ, and VALENTA), A., ii, 871.

concentrated, laws of (WASHBURN and MACINNES), A., ii, 1076.

saturated, vapour pressure and heat of solution of (SPERANSKI), A., ii, 1065; (WOITASCHEWSKY), A., ii, 1066.

aqueous, boiling points of (BERKELEY and APPLEBEY), A., ii, 1062.

solid, of metals, thermoelectric forces of (BERNOULLI), A., ii, 363.

in dissociating oxides (WÖHLER), A., ii, 295.

true, transition between colloidal and (v. WEIMARN), A., ii, 102.

**Solution pressure** and electrolytic dissociation (KRÜGER), A., ii, 789.

**Solvates**, nature of (OSTWALD), A., ii, 1068.

**Solvents**, influence of the, on the equilibrium constant (PISSARJEWSKY and SHAPOVALENKO), A., ii, 11; (PISSARJEWSKY and LITVIN), A., ii, 12.

**Somnirol** and its acetyl derivative (POWER and SALWAY), T., 502; P., 53.

**Somnitol** and its diacetyl derivative (POWER and SALWAY), T., 504; P., 53.

**Sophorin**, isolation of a sugar from (TER MEULEN), A., i, 391.

**Sorbic acid**, ethyl ester (AUWERS and EISENLOHR), A., ii, 784.

**Sorbose**, photochemical synthesis of (INGHILLERI), A., i, 354.

**Soxhlet extraction apparatus**, improved (SILBERRAD), A., ii, 877.

**Soy bean**, phytosterols of (MATTHES and DAHLE), A., i, 858.

**Soy bean oil**, constituents of (KEIMATSU), A., i, 766; (MATTHES and DAHLE), A., i, 831.

**Spark**, new radiant emission from the (STEUBING), A., ii, 838.

**Spark gap**. See under Electrochemistry.

**Sparteine**, reaction of (JORISSEN), A., ii, 1144.

silic tungstate (JAVILLIER), A., i, 152.

*iso***Sparteine**, and its derivatives (MOUREU and VALEUR), A., i, 319, 562.

**Species**, chemical differentiation of (WHELDALE), A., ii, 760.

**Specific gravity**. See Density.

**Specific heat**. See under Thermochemistry.

**Spectra**. See under Photochemistry.

**Spermatozoa**, histo-chemistry of (STEUDEL), A., ii, 626, 905.

**Spermotoxins**, neutralisation of, by extract of the testis and epididymis (METALNIKOFF), A., ii, 217.

**Spirans**, nomenclature of (RADULESCU), A., i, 497.

**Spirits**, analysis of, by means of colour reactions of aromatic aldehydes (v. FELLENBERG), A., ii, 667.

**Spirocyclic compounds**, synthesis of (RADULESCU), A., i, 458.

**Spirollosis**, mercury therapeutics of (LAUNOV and LEVADITI), A., ii, 912.

**Spleen**, function of, in fixation of antigens and in production of immune substances (LUCKHARDT and BECHT), A., ii, 812.

**Spodiosite** (CAMERON and McCaughey), A., ii, 734.

**Stachydrine** (SCHULZE and TRIER), A., i, 79.

**Stachyose**, hydrolysis of, by enzymes (BIERRY), A., i, 354.

**Stannic salts**. See under Tin.

**Star anise oil**, constituents of (SCHIMMEL & Co.), A., i, 894.

**Starch**, occurrence of, in sugar-beet roots (PEKLO), A., ii, 763.

action of ultra-violet light on (MASSOL), A., i, 356.

velocity of saccharification of (VAN LAER), A., ii, 28, 478.

chemical hysteresis of (RAKOWSKI), A., ii, 470.

acid hydrolysis of (DURYEA), A., i, 711.

action of acids and hydrazides on (OECHSNER DE CONINCK and RAYNAUD), A., i, 423.

action of hydrazides on (OECHSNER DE CONINCK), A., i, 181; (OECHSNER DE CONINCK and RAYNAUD), A., i, 607.

action of oxalic, lactic, malonic, and tartaric acids on (OECHSNER DE CONINCK and RAYNAUD), A., i, 770, 771.

adsorption of substances by (LLOYD), A., ii, 700.

formation of dextrans from, by bacilli (SCHARDINGER), A., i, 181.

nature of so-called gallisin in syrup of (GATTERBAUER), A., i, 837.

preparation of viscose from (OST, WESTHOFF, and GESSNER), A., i, 710.

metabolism. See Metabolism.

excretion of, by the kidneys (VOIGT), A., ii, 1116.

paste, catalytic transformations of (FERNBACH and WOLFF), A., i, 356.

detection of, in dressed food (CARLES), A., ii, 340.

estimation of (SCHUBERT), A., ii, 75; (GREIFENHAGEN, KÖNIG, and SCHOLL), A., ii, 1037.

**Starvation**, changes in blood-serum during (POLÁNYI), A., ii, 741.

**Statice gmelini** (kermek), constituents of the root of (POVARNIN and SEKRETEFF), A., ii, 64.

**Stearanilide**, *o*- and *p*-chloro- (KING and ORTON), T., 1380.

**Stearic acid**, separation of, from oleic acid (FALCIOLA), A., i, 174.

ammonium salts and separation of, from oleic acid (FALCIOLA), A., i, 5.

sodium salt, conductivity of (BOWDEN), T., 191; P., 5.

**Stearic acid**, *α*-bromo-, amide of, and *α*-iodo-, calcium salt and amide of (PONZIO), A., ii, 1015.

**Stearic acid**, *tribromotri-iodo*-, *trichloro-tri-iodo*-, and *tri-iodo*-, and calcium salts of the first and last (ERDMANN), A., i, 601, 832.

*dihydroxy*-, in soils (SCHREINER and LATHROP), A., ii, 923.

*iodo*-, guaiacol ester of (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 630.

**Stearoelaidic acid**, preparation of (GAWALOWSKI), A., i, 416.

**Stearoyl chloride**, *dibromo*-, and *di-iodo*- (HOFFMANN-LA ROCHE & Co.), A., i, 601.

**Steel**. See under Iron.

**Stereoisomerides**, transformation of stable, into labile modifications, by ultra-violet light (STOERMER, FRIDERICI, BRAUTIGAM, and NECKEL), A., i, 295.

**Stereoisomerism**, application of the phase rule to (VAN DER LINDEN), A., ii, 477.

spatial change of position and (WERNER), A., i, 424.

of quinquevalent nitrogen (SCHOLTZ), A., i, 326.

**Stibiotantalite**, analyses of (FORD), A., ii, 1104.

**Stibnite**, influence of light on the electrical conductivity of (GRIPENBERG), A., ii, 1045.

“**Stickstoffkalk**,” analysis of (DINS-LAGE), A., ii, 1027.

**Stilbene**, *p*-amino-, and *p*-nitro-, and its derivatives (PFEIFFER and SERGIEWSKAJA), A., i, 438.

*pp'*-dichloro-, dichloride (LAW), T., 1115.

7-nitro-, action of sodium methoxide on, and its isomeride (HEIM), A., i, 717.

*oo'*-dinitro-, dichloride (KLEGL and HAAS), A., i, 433.

**Stilbene-2-carboxylic acid**, 4-nitro-, 2':4'-dinitro-, 2'-nitro-4'-cyano-, and 4'-nitro-2'-cyano-, and its ethyl ester (PFEIFFER and MATTON), A., i, 448.

**Stilbene-4-carboxylic acid**, 2-nitro-, ethyl and methyl esters (PFEIFFER and MATTON), A., i, 449.

**Stilbene-2:2'-dicarboxylic acid**, 4'-nitro- (PFEIFFER and MATTON), A., i, 449.

**Stilbene 2:4'-dicarboxylic acid**, 2'-nitro-, and its methyl ester (PFEIFFER and MATTON), A., i, 448.

$\alpha$ - and  $\beta$ -**Stilbenediol** diacetates, nitration of (FRANCIS and KEANE), T., 347; P., 44.

**Stokes's law**, validity of (REINGANUM), A., ii, 104.

correction to (MILLIKAN), A., ii, 175.

**Stomach**, presence of bile in the (CATH-CART), A., ii, 749.  
 behaviour of lead compounds in the (THOMASON), A., ii, 60.  
 regeneration of proteins in the (GALGOLEFF), A., ii, 625.  
 calf's, rennin and its zymogen from the (HEDIN), A., ii, 621.

**Stomata**, excretion of substance by (MAZÉ), A., ii, 324.

**Stovaine** and its homologues, physical and physiological properties of (VELEY and SYMES), A., ii, 516.

**Strontium** and calcium, separation of the spectral lines of, in the magnetic field (MOORE), A., ii, 559.  
 salts, action of, on algae (LOEW), A., ii, 322.

**Strontium**, detection of, barium, calcium and lead (BROWNING and BLUMENTHAL), A., ii, 1032.  
 separation of, from calcium (MOSER and MACHIEDO), A., ii, 439; (HINDS), A., ii, 440.  
 separation of barium, calcium and (HORN VAN DER Bos), A., ii, 228; (BIRNRÄUER), A., ii, 770.

**Strophanthin** and digitoxin, comparative action of, on the heart (RODOLICO), A., ii, 515.

**Strüverite** from South Dakota (HESS and WELLS), A., ii, 499.

**strychnine**, inhibition of the toxic properties of, by peripheral nerves (WADA), A., ii, 315.  
 persistence of, in a corpse (CRAM and MESERVE), A., ii, 315.  
 influence of, on bacteria (SADIKOFF), A., ii, 1018.  
 hydrochloride, double salt of, with antimony pentachloride (THOMSEN), A., i, 484.  
*heptaiodide* (KRAUZE), A., i, 1016.  
 benzaldehyde sulphite and anhydro-sulphite (MAYER), A., i, 224.

**strychnine**, monobromo-, tetrachloro-, and octachloro-, and their derivatives (CIUSA and SCAGLIARINI), A., i, 1016.

**strychnine**, detection of (DENIGÈS), A., ii, 673.  
 detection of, colorimetric (MAMELI), A., ii, 552.  
 estimation of, colorimetrically (SCAN-DOLA), A., ii, 553.

**strychnos alkaloids** (LEUCHS and ANDERSON), A., i, 746, 1018; (LEUCHS and GEIGER), A., i, 1018; (TUNMANN), A., ii, 144.

**stuppeaic acid** (HESSE), A., i, 210.

**styrene** and its derivatives, heats of combustion of (LEMOULT), A., ii, 583. C. ii.

**Styrene**, action of magnesium organic compounds on (ONDO), A., i, 433.

**Styrene**, *p*-chloro- $\omega$ -nitro-,  $\omega$ -nitro- $\omega$ -hydroxy-, and its  $\alpha$ -carboxylic acid,  $\omega$ -nitro-*m*- and *p*-hydroxy-, and  $\alpha$ -*3*-*d*initro-2-hydroxy- (REMFY), T., 286; P., 21.

**Styrenes**, heats of combustion of (AUWERS, ROTH, and EISENLOHR), A., ii, 1065.

$\alpha$ -**Styryl- $\delta\delta$ -dimethylfulgenic acid** (STOBBE, BENARY, and SEYDEL), A., i, 381.

$\alpha$ -**Styryl- $\delta\delta$ -dimethylfulgide** (STOBBE, BENARY, and SEYDEL), A., i, 380.

$\beta$ -**Styryl- $\beta'$ -furyldivinyl ketone** (BAUER and DIETERLE), A., i, 922.

**Styryl methyl diketone (benzylidenediacetyl)** and its hydrazone derivatives (DIELS and ANDERSONN), A., i, 464.

**2-Styryl-3-methyl 4-quinazolone**, and amino- (BOGERT, BELL, and AMEND), A., i, 162, 163.

**Styryl-*m*, and *p*-oxyacetic acid,  $\omega$ -nitro-, ethyl ester** (REMFY), T., 286; P., 21.

**2-Styryl-4-quinazolone** and 3-amino-, 7-acetylamo-, 3:7-diacetylamo-, and  $\alpha$ -hydroxy-, and their derivatives (BOGERT, BELL, and AMEND), A., i, 162.

**Styryl  $\beta$ -styrylvinyl ketonephenylhydrazone** (BAUER and DIETERLE), A., i, 992.

**Sublimation**, apparatus for (DIEPOLDER), A., ii, 96; (WRIGHT), A., ii, 384.  
 in a vacuum, apparatus for (CHRISTOPHER), P., 236.

**Substance**,  $C_4HCl_5$ , from  $\alpha\alpha\gamma\delta\delta$ -hexachloro- $\Delta\beta$ -butylene and quinoline (NICODEMUS), A., i, 346.

$C_4H_{10}O_2$ , from the action of light on acetone and ethyl alcohol (CIAMICIAN and SILBER), A., i, 514.

$C_4H_6O_2N_4$ , from ethyl bromosuccinate and hydrazine hydrate, and its derivatives (CURTIUS and GOCKEL), A., i, 402.

$C_5H_{10}O_4N_4$ , from oxidation of 3- and 7-methyluric acids (GROHMANN), A., i, 691.

$C_5H_{12}O_3N_6$ , from oxidation of 3- and 7-methyluric acids (GROHMANN), A., i, 691.

$C_6H_{12}S$ , from  $\alpha\zeta$ -di-iodohexane and potassium sulphide (V. BRAUN), A., i, 75.

$C_6H_3O_2NCl_2$ , from *s*-dimethylpyrrole and sulphuryl chloride, and its derivatives (COLACICCHI), A., i, 225.

$C_7H_6OS_3$ , from  $\alpha$ -thienyl methyl ketone, carbon disulphide and potassium hydroxide and its derivatives (KELBER and SCHWARZ), A., i, 740. 99

**Substance**,  $C_7H_6O_4N_2$ , from condensation of nitromethane and 5-nitrosalicylaldehyde (REMFYR), T., 287.

$C_7H_{10}O_3N_2$ , from hydrazine hydrate and ethyl dimethylpyronedicarboxylate (PALAZZO and LIVERANI), A., i, 921.

$C_8H_{12}O_2$ , from condensation of crotonaldehyde (SMEDLEY), T., 1631.

$C_8H_{14}O_2$ , from condensation of crotonaldehyde (SMEDLEY), T., 1632.

$C_9H_{16}O_2$ , from oxidation of camphene (HENDERSON and SUTHERLAND), T., 1548; P., 212.

$C_9H_8OS_2$ , from acetophenone, carbon disulphide, and potassium hydroxide, and its ethers (KELBER and SCHWARZ), A., i, 741.

$C_9H_9O_2N_3$ , from cinnamoylhydrazide hydrochloride and sodium nitrite (MUCKERMANN), A., i, 682.

$C_9H_{15}O_2N_3$ , from extract of mushroom, and its aurichloride (KUTSCHER), A., ii, 528.

$C_9H_{16}O_6P$ , from  $\alpha$ -hydroxy- $\beta\beta$ -dimethylbutyric acid and phosphorus pentachloride (RICHARD), A., i, 8.

$C_{10}H_{10}O_4$ , from 3:4-dihydroxycinnamic acid and methyl alcohol (POSNER), A., i, 53.

$C_{10}H_{10}OS_2$ , from *p*-tolyl methyl ketone, carbon disulphide and potassium hydroxide, and its derivatives (KELBER and SCHWARZ), A., i, 740.

$C_{10}H_{14}O_2N_2$ , from condensation of methylethyl ketonecyanohydrin and sodiocyanacetic ester (INGLIS), T., 544; P., 46.

$C_{10}H_{15}O_2N$ , from bornylene and nitric acid (HENDERSON and HEILBRON), T., 1898; P., 249.

$C_{10}H_{17}O_2N$ , from bornylene and nitric acid (HENDERSON and HEILBRON), T., 1900; P., 249.

$C_{10}H_{18}O_2N_4$ , from chloralurethane (DIELS and GUKASSIANZ), A., i, 24.

$C_{11}H_{10}O_4$ , from  $\omega$ -bromomethylfurfuraldehyde and barium carbonate (COOPER and NUTTALL), T., 1200; P., 135.

$C_{11}H_{12}O_4$ , from 3:4-dihydroxycinnamic acid and methyl alcohol (POSNER), A., i, 53.

$C_{11}H_{14}O_4$ , from acetophenone and ethyl chlorocarbonate (HALLER and BAUER), A., i, 300.

$C_{11}H_{18}O$ , from  $\alpha\delta$ -di-iodopentane and potassium sulphide (v. BRAUN), A., i, 75.

**Substance**,  $C_{11}H_{13}ON$ , from heating  $\alpha$ -methylglutaconic acid trans-semianilide (THOLE and THORPE), T., 2231.

$C_{11}H_{16}O_3N_3$ , from chloralurethane (DIELS and GUKASSIANZ), A., i, 24.

$C_{12}H_{21}O_2N_3$ , from ethyl trimethylpyruvate and ammonia (RICHARD), A., i, 8.

$C_{12}H_{13}O_6N_3S_2$ , from phenylindamine and sodium hydrogen sulphite (WEIL, DÜRSCHNABEL, and LANDAUER), A., i, 1006.

$C_{13}H_{48}O_{12}N_8$ , from 5-hydroxy-1:3-diethylhydantoylcarbamide and acetone (BILTZ and TOPP), A., i, 693.

$C_{14}H_{19}O_8N_3$ , from nitration of quinol diisobutyl ether (NIETZKI and KESSELRING), A., i, 39.

$C_{15}H_{16}O_3$ , from angelica root oil, and its derivatives (BÖCKER and HAHN), A., i, 313.

$C_{15}H_{24}O$ , from the oil of *Pinus pumilo* (BÖCKER and HAHN), A., i, 549.

$C_{16}H_{12}O_6$ , from the seeds of *Casimiroa edulis* (POWER and CALLAN), T., 2006; P., 258.

$C_{16}H_{26}O_4$ , from undecioic acid and formaldehyde (FOKIN), A., i, 765.

$C_{16}H_{15}ON_2Cl$ , from  $\alpha$ -2-chloro-1-naphthylpentan- $\gamma$ -one and semicarbazide (SACHS and BRIGL), A., i, 721.

$C_{17}H_{18}O_2$ , from benzophenone and ethyl ether (PATERNÒ and CHIEFFI), A., i, 65.

$C_{17}H_{14}O_2N$ , from  $\alpha$ - or  $\beta$ -naphthoquinone and *p*-methylthiylaniline (ZINCKE and JÖRG), A., i, 40.

$C_{17}H_{14}O_3NCl$ , from quinolylacetylveratrole and hydrochloric acid (MANNICH and HÜBNER), A., i, 566.

$C_{18}H_4O_6Br_{14}$ , from the "urucuri" fruit (FRANK and GNÄDINGER), A., ii, 647.

$C_{18}H_{15}ON$ , from 2-methylquinoline methiodide and benzoyl chloride (VONGERICHTEN and ROTTA), A., i, 677.

$C_{18}H_{16}ON_2$ , from oxidation of 2-methylindole (PLANCHER and COLACICCHI), A., i, 566.

$C_{18}H_{18}O_2N_2$ , from aniline and 6-chloro-3-methyl- $\alpha$ -pyrone (THOLE and THORPE), T., 2225.

$C_{18}H_{18}O_4N_4$ , from chloralurethane (DIELS and GUKASSIANZ), A., i, 24.

$C_{18}H_{15}ON_2Cl$ , from diphenylcarbamyl chloride and pyridine, salts of (v. MEYER and NICOLAUS), A., i, 121.

**Substance**,  $C_{19}H_{16}ON$ , from oxidation of  $\beta$ -phenyl- $\beta$ -diphenylmethylhydroxylamine (ANGELI, ALESSANDRI, and AIAZZO-MANCINI), A., i, 544.

$C_{19}H_{19}O_3N_3$ , from 3-nitrocumaldehyde and phenylmethylpyrazolone (PIZZUTI), A., i, 62.

$C_{20}H_{30}O_5$ , from bryony root (POWER and MOORE), T., 940; P., 118.

$C_{20}H_{17}ON$ , from oxidation of  $\beta$ -benzyl- $\beta$ -diphenylmethylhydroxylamine (ANGELI, ALESSANDRI, and AIAZZO-MANCINI), A., i, 545.

$C_{20}H_{28}NCl$ , from  $\gamma$ -phenylpropyl chloride and dimethylamine (v. BRAUN), A., i, 35.

$C_{20}H_{28}NBr$ , from  $\gamma$ -phenylpropyl bromide and dimethylamine (v. BRAUN), A., i, 35.

$C_{20}H_{12}O_6NBr$ , from 2-(6-nitropiperonyl)-naphthalavanone and bromine (TORREY and CARDARELLI), A., i, 68.

$C_{21}H_{17}ON$ , from decomposition of phenylnitromethane (HEIM), A., i, 28.

$C_{21}H_{21}O_6N_3$ , from brucine, nitric acid and potassium hydrogen carbonate, and its quinone (LEUCHS and ANDERSON), A., i, 746.

$C_{22}H_{24}O_2$ , from 4:7-dimethylcoumarin and its bromine derivative (FRIES and VOLK), A., i, 205.

$C_{22}H_{14}N_2S$ , from diketone  $C_{22}H_{14}O_2N_2$  (ANGELICO), A., i, 1033.

$C_{22}H_{25}ON_3$ , from quinoline and hydroxylamine (KAUFMANN and STRÜBIN), A., i, 321.

$C_{22}H_{28}N_2S$ , from carvone hydro-sulphide and hydrogen cyanide (STEELE), P., 240.

$C_{22}H_{30}O_4S$ , from hydrolysis of the compound of hydrogen cyanide and carvone hydro-sulphide (STEELE), P., 241.

$C_{23}H_{22}N_2$ , from the action of light on quinaldine and acetone, and its salts (CIAMICIAN and SILBER), A., i, 647.

$C_{23}H_{32}O_2$ , from benzophenone and isomeric ether (PATERNÒ and CHIEFFI), A., i, 66.

$C_{24}H_{20}O_4N_2$ , from condensation of 3-keto-2- $p$ -dimethylaminoanilcoumaran and 2-coumaranone (FRIES and HASSELBACH), A., i, 151.

$C_{26}H_{22}O_3N_4$ , from interaction of  $\alpha$ -nitroso- $\beta$ -naphthol, methylamine hydrochloride and formaldehyde (LANGE), A., i, 505.

$C_{26}H_{40}O_4N_2$ , from reduction of dioscorine, and its aurichloride (GORTER), A., i, 562.

**Substance**,  $C_{27}H_{22}O_3$ , from the action of light on benzophenone and benzaldehyde (CIAMICIAN and SILBER), A., i, 647.

$C_{32}H_{23}N_5$ , from sodium benzeneazo- $\alpha$ -naphthyl sulphite (VOROSCHTSOFF), A., i, 820.

$C_{35}H_{27}N_3$ , from chlorinated pyridine and  $\beta$ -naphthylamine (REITZENSTEIN and BREUNING), A., i, 227.

$C_{44}H_{27}O_3N_9$ , from diketone  $C_{22}H_{14}O_2N_2$  (ANGELICO), A., i, 1033.

**Succinic acid**, oxidation of, by animal tissues (BATTELLI and STERN), A., ii, 132.

brucine hydrogen salt of (PICKARD and KENYON), T., 60.

yttrium salt of (BENNER), A., ii, 285.

menthyl esters of (HILDITCH), T., 222; P., 6.

**Succinic acid**, bromo-, ethyl ester, action of hydrazine hydrate on (CURTIUS and GOCKEL), A., i, 401.

*s*-dibromo-, action of aliphatic amines on (FRANKLAND and SMITH), P., 320.

action of benzylamine on (FRANKLAND), T., 1775; P., 206.

cinchonine and strychnine salts of (HOLMBERG), A., i, 768.

$\alpha$ -chloro-, ethyl ester (MCKENZIE and BARROW), T., 1919.

**Succinic acids**, stereoisomeric dihalogen (HOLMBERG), A., i, 767.

dibromo-, configuration of the stereoisomeric (MCKENZIE), P., 150.

*iso***Succino-*p*-toluidic acid**, ethyl ester, crystallography of (ROSATI), A., i, 776.

**Succinylacetocetic acid**, ethyl ester, and its hydrazine and hydroxylamine derivatives (SCHEIBER and LUNGWITZ), A., i, 836.

**Succinyl diacetocetic acid**, ethyl ester (SCHEIBER and LUNGWITZ), A., i, 836.

**Sucrose** (*saccharose, cane-sugar*) in the roots of the *Aristolochiaceæ* (LESLUEUR), A., ii, 525.

action of ultra-violet light on (BIERRY, HENRI, and RANC: v. EULER and OHLSÉN), A., i, 524.

solubility of lime in solutions of (CAMERON and PATTEN), A., i, 179; (CLAASSEN), A., i, 606.

effect of, on the accuracy of the copper voltameter (DEDE), A., ii, 461.

behaviour of, on heating (DUSCHSKY), A., i, 607, 769.

fate of injected, in the body (HEILNER), A., ii, 635.

liquid, density of, and of its solutions in water (SCHWERS), T., 1478; P., 208.

**Sucrose** (*saccharose, cane-sugar*), inversion of, by bees (KORNDÖRFER), A., ii, 1008.  
 action of injections of (WILENKO), A., ii, 1015.  
 detection of, in wines (SCHAFFER and PHILIPPE: ROTHENFUSSER), A., ii, 665.  
 estimation of, in the presence of other sugars (JOLLES), A., ii, 74.  
 estimation of, in beet-sugar molasses (OGILVIE), A., ii, 232.  
 estimation of calcium oxide in the products of refining of (WEISBERG), A., ii, 659.  
 estimation of sugar and of calcium in the residues from refining of (LINDDET), A., ii, 664.  
**Sugar**, formation of, in the liver (LOEWIT), A., ii, 130.  
 adsorption of, from solutions (WIEGNER and BURMEISTER), A., ii, 259.  
 action of chemical substances on the excretion of (BAER and BLUM), A., ii, 512.  
 influence of hydrazine on the amount of, in blood (UNDERHILL), A., ii, 910.  
 influence of the liver on the combustion of (VERZÁR), A., ii, 746.  
 injected, effect of muscular work on the decomposition of (HOHLWEG), A., ii, 127.  
 estimation of (BANG), A., ii, 664.  
 estimation of, by safranine (HASSELBALCH and LINDHARD), A., ii, 73.  
 estimation of, in blood (MICHAELIS and RONA), A., ii, 73; (RONA and DÖBLIN), A., ii, 302; (FRANK), A., ii, 340; (LÉPINE and BOULUD), A., ii, 619.  
 estimation of, in urine (GAEBEL), A., ii, 73; (BANG), A., ii, 664.  
 estimation of iodometrically, in urine (FERNAU), A., ii, 664.  
**Sugars**, relation between the configuration and rotation of (ANDERSON), A., i, 770.  
 effect of, on solutions of salts (GLOVER), T., 379.  
 action of ammonia and of sodium carbonate and hydroxides on solutions of (JOLLES), A., i, 421.  
 influence of arsenic compounds on the fermentation of, by yeast (HARDEN and YOUNG), A., ii, 519.  
 action of muscle plasma and pancreatic extract on (LEVENE and MEYER), A., ii, 414.  
 decomposition of, by bacteria (MENDEL), A., ii, 318.  
 action of *Bacillus lactis aërogenes* on (WALPOLE), A., ii, 318.

**Sugars**, degradation of (JOLLES), A., i, 15.  
 o-carboxyanilides of the (IRVINE and HYND), T., 161; P., 9.  
 estimation of, quantitatively (BARDACH and SILBERSTEIN), A., ii, 663.  
 estimation of, in liquorice root (ERIKSSON), A., ii, 346.  
 estimation of, in syrups (MAIN), A., ii, 446.  
 reducing, estimation of (BENEDICT), A., ii, 340.  
**Sugar, beet**, influence of nutrition on the composition of (ANDRLÍK and URBAN), A., ii, 427.  
 non-protein nitrogenous substances in (SMOLENSKI), A., ii, 145.  
 glycuronic acid derivative from (SMOLENSKI), A., ii, 428.  
**Sugar group**, syntheses of bases of the (FISCHER and ZACH), A., i, 117.  
**Sugar, invert.** See Invert sugar.  
 "Sugar sand," constituents of (WARREN), A., ii, 821.  
**Sugar solutions**, fermented, the influence of, on the respiration of wheat seedlings (IWANOFF), A., ii, 48.  
**Sulphamide**, nitro-, and its silver salt (ÉPHRAIM and LASOCKI), A., ii, 276.  
**Sulphaminobenzoylaminonaphthols**, preparation of, and their sulphonic acids (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 630.  
**Sulph ammonium** (RUFF and HECHT), A., ii, 277; (RUFF), A., ii, 484.  
**Sulphanilide**, and its derivatives (WOHL and KOCH), A., i, 36.  
**Sulphatide** from the human brain (Koch), A., ii, 129.  
**Sulphides**. See under Sulphur.  
**Sulphinic acid**, chloro-, propyl and isobutyl esters of (STÄHLER and SCHIRM), A., i, 174.  
**Sulphinic acids**, aromatic, intramolecular condensation of (HILDITCH), T., 1091; P., 139.  
 ortho-substituted (CLAASZ), A., i, 436.  
**o-Sulphobenzoic acid**, and imino-, and their potassium and barium salts (BERTOLO), A., i, 858.  
 derivatives of (COBB and FULLER), A., i, 637.  
**p-Sulphobenzoic acid**, o-amino-, fluorescence of, and its silver salt (KASTLE), A., i, 200.  
 fluorescence of, and its derivatives (KASTLE and HADEN), A., i, 974.  
**Sulphobenzoic acids**, amino-, and nitro- (VAN DORSEN), A., i, 29.  
**Sulphohydrazide**, hydrazine salt of (ÉPHRAIM and LASOCKI), A., ii, 277.

**Sulphonates**, metallic and organic, preparation of (SEYEWETZ and POIZAT), A., i, 360.

**Sulphones**, aromatic, action of sulphur on (BÖSEKEN), A., i, 533.

**Sulphonic acid**,  $C_{28}H_{22}O_4NS$ , barium salt of, from reduction of *o*-benzoylbenzoic acid anhydioxime (ROSE), A., i, 372.

**Sulphonic acid**, nitroso- (MANCHOT), A., ii, 107; (RASCHIG), A., ii, 200.

**Sulphonic acids**, preparation of, in the free state (KASTLE), A., i, 30.

**Sulphonyl chlorides**, action of tertiary bases on (WEDEKIND and SCHENK), A., i, 190.

**Sulphonyl-*p*-toluquinone**, bromo- (ZINCKE and BRUNE), A., i, 197.

**Sulpho-*p*-toluidide** (WOHL and KOCH), A., i, 37.

**Sulphur** and nitrogen, relative atomic weights of (BURT and USHER), A., ii, 389.

mutual behaviour of tellurium and (CHIKASHIGE), A., ii, 978.

equilibrium of (SMITS), A., ii, 1077.

equilibrium of the modifications of (SMITH and CARSON), A., ii, 977.

heat content of forms of (LEWIS and RANDALL), A., ii, 371.

relation between the triple points of (KRUYT), A., ii, 879.

absorption of light by (WIGAND), A., ii, 1084.

reversible reaction of, in light (WIGAND), A., ii, 878.

action of, in the vulcanisation of rubber (BARY and WEYDERT), A., i, 1003.

preparation of colloidal solutions of, by fractional coagulation (ODÉN), A., ii, 388.

colloidal (RAFFO and MANCINI), A., ii, 878.

colours of (LIESEGANG), A., ii, 37.

effect of, on sulphur metabolism (MAILLARD), A., ii, 622.

hydrosols, preparation and properties of (ODÉN), A., ii, 971.

liquid, surface tension of (RUDGE), A., ii, 258.

and its compounds, action of, on hydrazine (EPHRAIM and PIOTROWSKI), A., ii, 275.

direct combination of, with metals (OHMAN), A., ii, 481.

action of, on aromatic sulphones (BÖSEKEN), A., i, 533.

fungicidal properties of (FOREMAN), A., ii, 222; (MARCILLE), A., ii, 429.

required by farm crops (HART and PETERSON), A., ii, 431.

**Sulphur**, action of, in the intestine (FRANKL), A., ii, 749.

metabolism. See under Metabolism, in proteins (JOHNSON and BURNHAM), A., i, 696; (JOHNSON), A., i, 758.

compounds, absorption spectra of (PURVIS), A., ii, 560.

action of, on metabolism (JONES), A., ii, 742.

volatility of (DELÉPINE), A., ii, 1061.

with phosphorus (MAI), A., ii, 484, 719.

**Sulphur monochloride**, action of, on benzene, chlorobenzene and toluene (BÖSEKEN and KONING), A., i, 532.

use of, in analysis of the rare earth minerals (HICKS), A., ii, 934.

**Thionyl chloride**, action of, on alcohols, in presence of a tertiary base (DARZENS), A., i, 513.

action of, on esters of hydroxy-acids in presence of a tertiary base (DARZENS), A., i, 517.

action of, on optically active hydroxy-acids and esters (MCKENZIE and BARROW), T., 1910; P., 232.

action of, on magnesium alkyl halides (ODDO), A., i, 286.

action of, on metallic oxides (DARZENS and BOURION), A., ii, 878.

action of, on tellurium (v. HORVÁTH), A., ii, 598.

**Sulphuryl chloride**, action of, on *s*-dimethylpyrrole (COLACICCHI), A., i, 224.

action of, on metals (NORTH), A., ii, 798.

action of, on tellurium (v. HORVÁTH), A., ii, 598.

**Sulphides**, estimation of, in alkali cyanide (ROSSITER), A., ii, 654.

**Sulphur dioxide**, orthobaric densities and the rectilinear diameter of, in the neighbourhood of the critical point (CARDOSO), A., ii, 854.

equilibrium of, with methyl alcohol (BAUME and PAMFIL), A., i, 414.

liquid, electrical conductivity of solutions of (FRANKLIN), A., ii, 1052.

absorption of, by caoutchouc and by blood charcoal (REYCHLER), A., ii, 19.

action of, on ammonia (EPHRAIM and PIOTROWSKI), A., ii, 274.

influence of organic liquids on the interaction of hydrogen sulphide (KLEIN), A., ii, 200.

**Sulphur dioxide**, action of, on magnesium alkyl halides (ODDO), A., i, 286.  
 reduction of, in the presence of nickel (NEOGI and ADHICĀRY), A., ii, 107.  
 use of, in iodometric analysis (ELVOVE), A., ii, 148.  
 estimation of, in white wines (RICHTER), A., i, 330.  
**trioxide**, quantitative estimation of, in sulphuric acid (FINCH), A., ii, 150.  
**Sulphurous acid**, velocity of the reaction between iodic acid and (PATTERSON and FORSYTH), P., 320.  
**Sulphuric acid**, molecular weight and constitution of (ODDO and ANELLI), A., ii, 717.  
 dissociation of (DRUCKER), A., ii, 687; (ENKLAAR), A., ii, 1071.  
 physical properties of mixtures of ether and (POUND), T., 698.  
 ammonia and water, equilibrium in the system (VAN DORP), A., ii, 379.  
 and ethyl alcohol, equilibrium in the reaction between (KREMANN), A., ii, 28.  
 and methyl alcohol, equilibrium in the reaction between (KREMANN and NEUMANN), A., ii, 28.  
 oxidation of hydrogen by (MILBAUER), A., ii, 872.  
 interaction of aromatic disulphides and (PREScott and SMILES), T., 640; P., 65.  
 interaction of aromatic disulphoxides and (HILDITCH), T., 1091; P., 139.  
 action of, on *p*-tolyl ethyl ether (ROBERTS and ALLEMAN), A., i, 369.  
 theory of the lead chamber process for (RASCHIG), A., ii, 272; (WENTZKI), A., ii, 273, 878; (DIVERS), A., ii, 596.  
 organic catalytic reactions of (ODDO), A., i, 943.  
 estimation of, gravimetrically (KLEIN), A., ii, 822.  
 and sulphates, estimation of, volumetrically (AUGER and GABILLON), A., ii, 330; (REPITON), A., ii, 331.  
 estimation of, in rain water (WITUYNJ), A., ii, 432.  
 estimation of, in soils (DE SORNAY), A., ii, 1027.  
 estimation of sulphur trioxide in (FINCH), A., ii, 150.

**Sulphur:—**

**Sulphates**, exact estimation of (JOHNSTON and ADAMS), A., ii, 766.

**Persulphates**, organic, of bivalent metals (BARBIERI and CALZOLARI), A., ii, 889.

**Hyposulphurous acid**, conductivity and dissociation of, compared with analogous sulphur-oxygen compounds (JELLINEK), A., ii, 362.

**Hyposulphites**, preparation of, and their equilibrium with water (JELLINEK), A., ii, 278, 799.

electrolytic, preparation of (JELLINEK), A., ii, 482.  
 potential of reactions of (JELLINEK), A., ii, 365.

**Thiosulphates**, detection of (CASOLARI), A., i, 197.

**Thionates**, reactions of (FELD), A., ii, 289.

**Dithionic acid**, velocity of decomposition of (MULLER), A., ii, 266.

**Pentathionic acid**, occurrence of, in natural waters (MACLAURIN), P., 10.

**Sulphur**, estimation of (ANELLI), A., ii, 533.

estimation of, in brass and bronze (THURNAUER), A., ii, 150.

estimation of, in coal (WARUNIS), A., ii, 436.

estimation of, in coal gas (BLAIR), A., ii, 534.

estimation of, in iron and steel (WENNEMANN), A., ii, 1026.

estimation of, volumetrically, in iron and steel (ELLIOT), A., ii, 1131.

apparatus for estimation of, in iron or steel (WENNEMANN), A., ii, 653, 938; (JABOULAY), A., ii, 654.

estimation of, in metabolism (TAYLOR), A., ii, 410.

free, estimation of, in minerals (LÉVY-W.), A., ii, 1130.

estimation of, in organic compounds (WARUNIS), A., ii, 67.

estimation of, in petroleum (SANDERS), P., 329.

sublimed, estimation of, in a mixture of different sulphurs (TAUREL and GRIFFER), A., ii, 533.

estimation of, in tissues (WOLF and ÖSTERBERG), A., ii, 67.

estimation of, in urine (DENIS), A., ii, 66; (SCHMIDT), A., ii, 67; (BENEDICT), A., ii, 330; (SALKOWSKI), A., ii, 626.

**Sulphur organic compounds**, aromatic (ZINCKE), A., i, 368.

**Sulphides**, aromatic, electrolytic oxidation of (FICHTER and SJÖSTEDT), A., i, 41.

**Sulphuric acid.** See under Sulphur.

**Sulphur insulation**, effect of light on (BATES), A., ii, 836.

**Sulphuryl chloride.** See under Sulphur.

**Sunflower.** See *Helianthus*.

**Suprarenal glands**, constituents of the (LOHMANN), A., ii, 630.

depressor action of the (STUDZINSKI), A., ii, 509.

**Surface energy**, molecular, of organic substances, abnormal temperature-coefficients of the (WALDEN), A., ii, 97.

**Surface tension**, measurements of (MAGINI), A., ii, 258.

measurement of, by the method of capillary rise (VERSCHAFFELT and VAN DER NOOT), A., ii, 701.

at contact of two liquids (VAN DER NOOT), A., ii, 859.

**Suspensions**, viscosity of (BANCELIN), A., ii, 1067.

**Sweat**, elimination of nitrogen, sulphur and phosphorus in human (TAYLOR), A., ii, 307.

**Syphilis**, mercury therapeutics of (LAUNOY and LEVADITI), A., ii, 912.

**Syphilis reaction**, action of cholesterol and its derivatives in the (BROWNING and CRUICKSHANK), A., ii, 1014, 1118.

**4-Syringoyloxybenzoic acid** (FISCHER, FREUDENBERG, and LEPSIUS), A., i, 875.

**Syrup**, estimation of ash and sugar in (MAIN), A., ii, 446.

estimation of gum in (ROCQUES and SELLIER), A., ii, 775.

**Systems**, adsorption, general phase theorem for (PAWLOFF), A., ii, 99.

two-component, space figure for (WHITE), A., ii, 1064.

disperse (v. WEIMARN), A., ii, 381.

application of the phase rule to (PAWLOFF), A., ii, 27.

condensed (PAWLOFF), A., ii, 263.

heterogeneous, formation of layers in (HATSCHEK), A., ii, 972.

velocity of reaction in (BOSELLI), A., ii, 196, 265.

reactions in, and the influence of alcohol on the same (JABŁCZYŃSKI and JABŁOŃSKI), A., ii, 27.

**T.**

“**Tagayasan**” wood, causing inflammation (IWAKAWA), A., i, 793.

**$\alpha$ -Tanacetogenecarboxylic acid**, methyl ester (SEMMLER and MAYER), A., i, 733.

**Tanacetone**, detection of, in absinthe (ENZ: PHILIPPE and v. FELLENBERG), A., ii, 1040.

**Tanacetone**, hydrazone of, and its derivatives (KIJNER), A., i, 71.

**$\alpha$ -Tanacetyl alcohol** ( $\beta$ -thujyl alcohol) and its derivatives (PAOLINI), A., i, 731.

**Tan liquors**, estimation of, electrometrically (SAND and LAW), A., ii, 233.

estimation of acids in (PROCTER and SEYMOUR-JONES), A., ii, 76; (WOOD, SAND, and LAW), A., ii, 942.

**Tannin**, composition of (STEINKOPF and SARGARIAN), A., i, 1004.

in plant cells (LOEW and BOKORNY), A., ii, 324.

in ripening fruits (LLOYD), A., ii, 918.

in the roots of *Vitis* (PETRI), A., ii, 325.

solutions, reactions of (GRASSER), A., ii, 1040.

estimation of, by means of casein (NIERENSTEIN), A., ii, 236.

estimation of, by means of nickel hydroxide (SINGH), A., ii, 946.

estimation of, by means of the refractometer (FALCIOLA and CORRIDI), A., ii, 163.

estimation of, in wines (MALVEZIN), A., ii, 779.

glycerol and tartaric acid, estimation of, in liquids (HINARD), A., ii, 942.

**Tannins** (NIERENSTEIN), A., i, 382.

**Tantalic acid.** See under Tantalum.

**Tantalum**, atomic weight of (CHAPIN and SMITH), A., ii, 899.

melting-point of (v. PIRANI and MEYER), A., ii, 899.

solubility of hydrogen in (SIEVERTS and BERGER), A., ii, 990.

estimation of, and columbium (FOOTE and Langley), A., ii, 71, 72.

**Tantalic acid** and its sodium salt, preparation of, from natural sources (WEDEKIND and MAASS), A., ii, 44.

**Tar** on roads, effect of, on vegetation (MIRANDE), A., ii, 64.

**Tarriolyl chloride**, *di*-iodo-(HOFFMANN-LA ROCHE & Co.), A., i, 601.

“**Tartar**,” dental, formation of (BARILLE), A., ii, 741.

**Tartaric acid**, dibenzylamides of (FRANKLAND), T., 1782; P., 206.

salts of (HILDITCH), T., 236.

basic barium salts of (QUARTAROLI), A., i, 176.

cupric salts of (PICKERING), T., 169; P., 7.

potassium salt, action of the oxides of lead on (KRAUSKOPF), A., i, 519.

*di*- $\beta$ -octyl esters of (PICKARD and KENYON), T., 68.

action of, on starch and dextrin (OECHSNER DE CONINCK and RAYNAUD), A., i, 771.

**Tartaric acid**, estimation of (ORDONNEAU), A., ii, 77; (HECZKO), A., ii, 341, 342.  
 estimation of, in fruits and their juices (WARCOLLIER), A., ii, 1038.  
 estimation of, in tartrates and in wines (KLING), A., ii, 666.  
 estimation of, in wine residues (CARLES), A., ii, 342.  
 glycerol and tannin, estimation of, in liquids (HINARD), A., ii, 942.

**Tartaric acids**, behaviour of, in the organism (NEUBERG and SANEOYOSHI), A., ii, 1016.

**Tartrates**, fermentation of (ORDONNEAU), A., i, 420.  
 estimation of (TOBLER and CARMELLI), A., ii, 447.

**Tate's laws** and the weight of a falling drop (MORGAN), A., ii, 372, 584; (MORGAN and THOMSEN), A., ii, 584; (MORGAN and DAGHLIAN), A., ii, 585; (MORGAN and SCHWARTZ), A., ii, 698; (MORGAN and CANN), A., ii, 699; (MORGAN and MCAFEE), A., ii, 857; (MORGAN and OWEN), A., ii, 1067.

**Tautomeric compounds**, thermochemical characteristics of (SVENTOSLAVSKY), A., ii, 188.

**Tautomerism**, studies on (KNORR, ROTHE, and AVERBECK), A., i, 516; (KNORR and FISCHER), A., i, 976; (KNORR and SCHUBERT), A., i, 948.  
 keto-enolic (MEYER), A., i, 350, 833, 865; (MEYER and KAPPELMEIER), A., i, 832.

**Tektites**, gases enclosed in (BECK), A., ii, 292.

**Telluric acid**. See under Tellurium.

**Tellurium**, pure, preparation of (SCHELLE), A., ii, 388.  
 complexity of (HARCOURT and BAKER), T., 1311; P., 187.  
 mutual behaviour of sulphur and (CHIKASHIGÉ), A., ii, 978.  
 action of sulphuryl and thionyl chlorides on (v. HORVÁTH), A., ii, 598.

**Tellurium**, alkylammonium salts of (GUTBIER and FLURY), A., i, 182.

**Tellurium alloys** with cadmium and with tin (KOBAYASHI), A., ii, 40.  
 with gold (COSTE), A., ii, 405.  
 with zinc (KOBAYASHI), A., ii, 1089.

**Telluric acid**, oxalato-salts of (ROSENHEIM and WEINHEBER), A., i, 109.  
 estimation of, volumetrically (ROSENHEIM and WEINHEBER), A., ii, 151.

**Tellurium organic compounds**, aromatic (LEDERER), A., i, 857.

**Tellurium**, estimation of, gravimetrically (ROSENHEIM and WEINHEBER), A., ii, 151.

**Temperature**. See under Thermochemistry.

**Terephthalic acid**, di-tert.-butyl ester (PFANNL), A., i, 784.

**Terephthaloyl bromide** (STAUDINGER and CLAR), A., i, 638.

**Ternary systems** (BONNER), A., ii, 26.  
 crystallisation in (PARRAVANO and SIROVICH), A., i, 704, 705.

of silver and lead halogen salts (MATTHES), A., ii, 476.

**Terpenes**, chemistry of the (HENDERSON and SUTHERLAND), T., 1539; P., 211; (HENDERSON and HEILBRON), T., 1887; P., 248; (HENDERSON and BOYD), T., 2159; P., 276.  
 synthesis of the (LUFF and PERKIN), T., 518; P., 57; (CHOU and PERKIN), T., 526, P., 57; (PERKIN), T., 727, 741; P., 95.  
 and ethereal oils (WALLACH), A., i, 310, 312, 469, 473, 891.  
 heats of combustion of (AUWERS, ROTH, and EISENLOHR), A., ii, 1065.  
 preparation of isoprene from (STAUDINGER and KLEVER), A., i, 731.  
 decomposition of, by glowing metallic wires (HARRIES and GOTTLÖB), A., i, 798.  
 action of iodine on (CASANOVA), A., i, 218.  
 reduction of (IPATIEFF), A., i, 137.

**cis-Terpin hydrate**, desiccation of (LEULIER), A., i, 548.

**Terpineol nitrosoazide** (FORSTER and NEWMAN), T., 250; P., 20.

**Testis**, constituents of the (LOHMANN), A., ii, 630.  
 neutralisation of spermatotoxins and alkaloids by extract of (METALNIKOFF), A., ii, 217.

**Tetanus toxin**, combination of, with other substances (LOEWE), A., ii, 638, 912.

**Tetra-acetylgluco-*p*-hydroxybenzoic acid**, methyl ester (MAUTHNER), A., i, 647.

**Tetra-acetylglucosamine methylglucoside** (HAMLIN), A., i, 529.

**Tetra-acetylglucovanillic acid**, methyl ester (MAUTHNER), A., i, 647.

**Tetra-alkylsilicanes** (BYGDÉN), A., i, 845.

**$\alpha\alpha\gamma$ -Tetrabenzoyl- $\beta$ -phenylpropane** (DIECKMANN and v. FISCHER), A., i, 452.

**Tetracinnamylammonium hydroxide** (EMDE and SCHELLBACH), A., i, 283.

**s-Tetra-4-diphenylethane** (SCHLENK, RENNING, and RACKY), A., i, 596.

**Tetra-4-diphenylethylene** (SCHLENK, RENNING, and RACKY), A., i, 596.

**Tetradiphenylhydrazine** and its hydrochloride (WIELAND and SÜSSER), A., i, 571.

**$\gamma\gamma\epsilon$ -Tetraethylheptan- $\delta$ -ol** and its phenylurethane (ZERNER), A., i, 950.

**$\gamma\gamma\epsilon$ -Tetraethylheptan- $\delta$ -one** (ZERNER), A., i, 523, 950.

**Tetraethylthiocarbamide** (DELÉPINE), A., i, 23.

**Tetragalloylellagic acid** (NIERENSTEIN), A., i, 382.

**$\Delta^1$ -Tetrahydrobenzaldehyde**, preparation of (BORSCHE and SCHMIDT), A., i, 59.

**Tetrahydrobenzthiopyran (thiochroman)** and its derivatives (v. BRAUN), A., i, 76.

**Tetrahydroberberine** methiodide (GADAMER), A., i, 153.

**l-Tetrahydrocaryone**, oxime and semicarbazone of (WALLACH), A., i, 470.

**Tetrahydronicarvelone** (WALLACH), A., i, 471.

**Tetrahydro- $\beta$ -naphthylamine**, influence of, on temperature and respiratory exchange (MUTCH and PEMBREY), A., ii, 1017.

hydrochloride, effect of injecting (BLACK), A., ii, 636.

**Tetrahydropiperic acid** and its derivatives (BORSCHE), A., i, 1018.

**Tetrahydropiperine** (SKITA and FRANCK), A., i, 1017.

**Tetrahydroquininaline.** See 2-Methyltetrahydroquinoline.

**Tetrahydroisoquinoline**, 7-hydroxy-, and its salts (PICTET and SPENGLER), A., i, 750.

**Tetrahydroisoquinoline-3-carboxylic acid**, and 7-hydroxy- (PICTET and SPENGLER), A., i, 750.

**2-Tetrahydro-2'-thio-6'-pyrimidone-thiol)-1:6-dihydro-6-pyrimidone** (JOHNSON and SHEPARD), A., i, 924.

**Tetrame-4-carboxylic acid** and its potassium salt (BENARY), A., i, 672.

**2:4:2':4', and 3:4:3':4' Tetramethoxy-azobenzene** (KAUFFMANN and KUGEL), A., i, 930.

**2:4:5:4'-Tetramethoxybenzophenone** and its phenylhydrazone (BARGELLINI and MARTEGIANI), A., i, 966.

**2':3':4':6'-Tetramethoxychalkone** (BARGELLINI and BINI), A., i, 212.

**4:2':4':5' Tetramethoxychalkone** (BARGELLINI and AVRUTIN), A., i, 68.

**Tetramethoxydiphenylanthrone** (SCHARWIN, KUSNEZOFF, NAUMOFF, GANDURIN, Bjenkoff, and DMITRIEFF), A., i, 656.

**3:4:6:8-Tetramethoxyphenanthrene-9-carboxylic acid** and its methyl ester (PSCHORR and KNÖFFLER), A., i, 669.

**4:4':4":4'''-Tetramethoxytetraphenylethylene** (STAUDINGER, CLAR, and CZAKO), A., i, 625.

**$\alpha\gamma\gamma\gamma$ -Tetramethylacetocetic acid** and its ethyl ester (WAHLBERG), A., i, 707.

**1:3:6:8-Tetramethylallantoin**, and 7-thio- (BILTZ and KREBS), A., i, 242.

**$\alpha\epsilon$ -Tetramethyl- $pp'$ -diaminodiphenyl- $\gamma$ -diphenylmethyleno- $\Delta^{\alpha\beta}$ -pentadiene** (STAUDINGER and KON), A., i, 879.

**Tetramethyl- $pp'$ -diaminodiphenyl ketone** hydrazone and its benzylidene derivative and ketazine (WIELAND and ROSEEU), A., i, 572.

**Tetramethyl- $pp'$ -diaminotetraphenylethylene** (STAUDINGER and KON), A., i, 879.

**Tetramethylammonium chloride**, physiological action of (MARSHALL), A., ii, 754.

hyponitrite, decomposition of, by heat (RAY and SEN), T., 1466; P., 121.

nitrite, decomposition of, by heat (RAY and SEN), P., 4.

**$\beta\gamma\delta$ -Tetramethylamylene- $\beta\gamma$ -glycol** (RICHARD), A., i, 8.

**3:4:3':4'-Tetramethyldiphenyl** and amino-, 6-nitro-, and tetranitro-, and their derivatives (CROSSLEY and HAMPSHIRE), T., 721; P., 90.

**Tetramethylenediamine.** See Butane,  $\alpha\delta$ -diamino-.

**Tetramethylethylenediamine** and its platinichloride (SKRAUP and PHILIPPI), A., ii, 588.

**Tetramethyl glucose**, nitrogen derivatives of (IRVINE and HYND), T., 167; P., 9.

**$\alpha\beta\beta\beta'$ -Tetramethylguanidine** aurichloride (SCHENCK), A., i, 843.

**Tetramethylcycloheptadiene** (RUPE and KERKOVIA), A., i, 848.

**Tetramethylcycloheptatriene** and its dihydrobromide (RUPE and KERKOVIA), A., i, 847.

**Tetramethylcyclohexandione** and its semicarbazone (BAMBERGER and BLANGÉY), A., i, 883, 884.

**Tetramethylorcinol**, dibromo-, and its derivatives (HERZIG, WENZEL, ZEIDLER, and SCHWADRON), A., i, 777.

**1:2:2:3-Tetramethyl-4-cyclopentanol** and its phenylurethane (LOCQUIN), A., i, 792.

**1:2:2:3-Tetramethyl-4-cyclo-pentanone** and its semicarbazones (LOCQUIN), A., i, 792.

**2:3:3:4-Tetramethyl- $\Delta^1$ -cyclopentenone-5.** See 2-Methyl-laurenone.

**$\alpha\alpha\alpha$ -Tetramethylpimelamide** (HALLER and BAUER), A., i, 652.

**1:2:4:6 Tetramethylpyridinium perchlorate** (v. BAUER and PICCARD), A., i, 901.

**1:2:6:8-Tetramethyltetrahydroquinoline and its salts** (JONES and EVANS), T., 337.

**Tetramethylthiocarbamide**, methodide of (DELÉPINE), A., i, 23.

**Tetramethylsulphothiocarbamide** and its picrate (DELÉPINE), A., i, 23.

**$\alpha\alpha\alpha$ -Tetramethylpimelic acid** (HALLER and BAUER), A., i, 652.

**Tetramic acid** and its oximino-derivative (BENARY), A., i, 673.

**Tetraoxy-2-methylthiophen** and tribromo-, tetrabromide, and polynitro- (LANFRY), A., i, 1009.

**Tetraoxythiophen** and its octabromide (LANFRY), A., i, 740.

**Tetraphenylacetone** (STAUDINGER and GÖLLER), A., i, 307.

**2:2:4:4-Tetraphenylcyclobutan-1:3-dione** (STAUDINGER and GÖLLER), A., i, 306.

**Tetraphenylchloro- and *m*-dichloroquinodimethane** (STAUDINGER and BEREZA), A., i, 462.

**Tetraphenylidihydrotriazole** (BUSCH and RUPPENTHAL), A., i, 87.

**Tetraphenylethane**, *o*-bromo-, *o*-chloro-, and *di-p*-chloro-*o*-bromo- (GOMBERG and VAN SLYKE), A., i, 361.

**Tetraphenylethylene**, 4:4':4":4'''-tetrachloro-, and its dichloride (NORRIS, THOMAS, and BROWN), A., i, 32.

**1:2:4:5-Tetraphenylglyoxaline** and its salts (EVEREST and McCOMBIE), T., 1748; P., 209.

**Tetraphenylhydrazine** (WIELAND), A., i, 569.

**Tetraphenylmethane**, dihydroxy- (v. MEYER and FISCHER), A., i, 121.

**$\alpha\gamma\epsilon$ -Tetraphenyl- $\Delta^{\alpha}$ -penten- $\epsilon$ -ol** (REYNOLDS), A., i, 861.

**Tetraphenyltoluquinodimethane** (STAUDINGER and BEREZA), A., i, 462.

**Tetrapropylthiocarbamide** (DELÉPINE), A., i, 23.

**Tetrapropylsulphothiocarbamide** (DELÉPINE), A., i, 23.

**Tetra-*p*-tolylpyrazine** (CURTIUS and KASTNER), A., i, 325.

**Tetrodon poison** (TAHARA), A., ii, 133.

**Tetrodopentose** (TAHARA), A., ii, 133.

**Tetrolaldehyde** ( $\Delta^{\alpha}$ -butinal) and its oxime (CLAISEN), A., i, 492.

and its derivatives (VIGUIER), A., i, 522.

**Thalleioquinine**, and its salts (COMAN-DUCCI), A., i, 317.

**Thallium**, crystallographic relations of indium and (WALLACE), A., ii, 890.

**Thallium alloys** with calcium and with manganese (BAAR), A., ii, 611.

**Thallous hydroxide** (BAHR), A., ii, 803.

cerous nitrate (JANTSCH and WIGDOROW), A., ii, 115.

lanthanum nitrate (JANTSCH and WIGDOROW), A., ii, 114.

sulphate, transference experiments with (KALK), A., ii, 90.

**Thallium ion**, measurement of the potential of the (SPENCER), A., ii, 364.

**Tharmasite** from Beaver County, Utah (BUTLER and SCHALLER), A., ii, 209.

**Thea Sasangua**, oil from (KIMURA), A., i, 388.

**Thebaine**, physiological action of (HILDEBRANDT), A., ii, 517.

oxide and its hydrochloride (FREUND and SPEYER), A., i, 77.

**Thebenine**, physiological action of (HILDEBRANDT), A., ii, 517.

**Theobromine**, degradation of (BILTZ and TOPP), A., i, 692.

and caffeine, estimation of (MONTHULÉ), A., ii, 673.

**Theophylline**, coupling of, with diazotised dichloroaniline (KALLE & Co.), A., i, 507.

**Thermal analysis.** See Analysis.

**Thermic reactions.** See under Thermochemistry.

**THERMOCHEMISTRY:—**

**Thermochemical** characteristics of tautomeric compounds (SVENTOSLAVSKY), A., ii, 188.

investigations (AUWERS, ROTH, and EISENLOHR), A., ii, 1065.

studies (SVENTOSLAVSKY), A., ii, 967.

**Thermodynamic** chemistry, simple and complex systems of (VAN LAAR), A., ii, 256.

**Thermodynamics** of standard cells (COHEN), A., ii, 180.

and the kinetic theory of gases (BERTHOUD), A., ii, 578.

**Heat**, conduction of, through rarefied gases (SODDY and BERRY), A., ii, 253.

relation of, to muscular contraction (HILL), A., ii, 215.

**Thermal conductivity** of solid non-metals (EUCKEN), A., ii, 185.

reactions in a vacuum (WESTON and ELLIS), A., ii, 398.

**Specific heat**, theory of (NERNST), A., ii, 464; (NERNST and LINDEMANN), A., ii, 1059.

## THERMOCHEMISTRY:—

**Specific heat**, at low temperatures (POLLITZER), A., ii, 180; (NERNST), A., ii, 368; (LINDEMANN), A., ii, 369; (NERNST and LINDEMANN), A., ii, 466; (KOREF), A., ii, 964.  
 of gases (THIBAUT), A., ii, 695; (DRUCKER), A., ii, 792.  
 of liquids, determination of (MELLECEUR), A., ii, 851.  
 of solids at low temperatures (BARSCHALL), A., ii, 580.  
 relation between, and elastic properties of solids with monatomic molecules (EINSTEIN), A., ii, 186.  
 of solutions, calculation of (PASCHKY), A., ii, 851.  
**Atomic heat** of the elements (KOENIGSBERGER), A., ii, 580.  
**Molecular heat of fusion** (BAUD), A., ii, 581.  
**Heat of admixture** of substances (KLEEMAN), A., ii, 371.  
**Heat of combustion** of compounds of physiological importance (EMERY and BENEDICT), A., ii, 857.  
**Heat of evaporation**, determination of, of water and other liquids (RICHARDS and MATHEWS), A., ii, 697.  
**Heat of fusion** of substances melting near atmospheric temperature (LUGININ and DUPONT), A., ii, 369.  
**Heat of neutralisation**, measurement of, by means of a Dewar flask (MATHEWS and GERMANN), A., ii, 187.  
**Heat of reaction** in non-aqueous solutions (MATHEWS), A., ii, 855.  
**Heat of vapourisation**, electrical determination of (NAGORNOFF and ROTINJANZ), A., ii, 965.  
 relation of, to other physical constants (MONTGOMERY), A., ii, 965.  
 vapour pressure, and temperature, relation between (CEDERBERG), A., ii, 854.  
 latent, of liquids, calculation of (THORKELSON : LEWIS), A., ii, 855.  
 in mixed liquids (TYRER), T., 1638; P., 215, 319.  
**Temperature**, bath for maintaining constant (MORGAN), A., ii, 384.  
 relation of osmotic pressure to (MORSE, HOLLAND, and CARPENTER), A., ii, 375; (MORSE, HOLLAND, and ZIES; MORSE, HOLLAND, and MYERS), A., ii, 473; (MORSE, HOLLAND, ZIES, MYERS, CLARK, and GILL), A., ii, 701.

## THERMOCHEMISTRY:—

**Temperature**, heat of vaporisation and vapour pressure, relation between (CEDERBERG), A., ii, 854.  
 low, calculation of (ONNES), A., ii, 368.  
 optimum, for physiological processes (VAN AMSTEL and VAN ITERSON), A., ii, 319.  
**Calorimeter**, simple combustion (WRIGHT), A., ii, 1064.  
 copper, measurement of specific heat with the (KOREF), A., ii, 964.  
**Thermometer**, electric signal (MICHEL), A., ii, 963.  
 platinum, comparison of the hydrogen-, helium-, and nitrogen-thermometers (HOLBORN and HENNING), A., ii, 850.  
**Thermometry**, use of the transition temperatures of sodium chromate in (RICHARDS and KELLEY), A., ii, 695.  
**Thermoregulator**, Reichert, modification of the (FONTAINE), A., ii, 252.  
**Thermostat**, transparent (PALOMAA), A., ii, 464.  
**Thermodynamics**. See under Thermochemistry.  
**Thermoelectric properties**. See under Electrochemistry.  
**Thermoregulator**. See under Thermochemistry.  
**Thermostat**. See under Thermochemistry.  
**Thermotropy** and phototropy, studies in (SENIER and CLARKE), T., 2081; P., 260.  
**Thianthren** and its derivatives, and 4-chloro-, and 4:4'-dichloro- (FRIES and VOGT), A., i, 555.  
 isomeric disulphoxides from (FRIES and VOGT), A., i, 395.  
**Thianthren-2:6-diphthaloylic acid** (SCHOLL and SEER), A., i, 557.  
**Thianthren-2-phthaloylic acid** (SCHOLL and SEER), A., i, 557.  
**Thiazole-thioindigo** derivatives, preparation of (KALLE & Co.), A., i, 678.  
 **$\alpha$ -Thienyl methyl ketone**, action of carbon disulphide and potassium hydroxide (KELBER and SCHWARZ), A., i, 740.  
**Thioamides** (JOHNSON and BURNHAM), A., i, 712.  
**Thiobenzamide**, condensation of, with benzonitrile (MATSUI), A., i, 201.  
**Thiobenzanilide**, preparation of (BARNETT), P., 8.  
 action of hydrogen dioxide on, and formation of its oxide (LEETE and BARNETT), P., 120.

**Thiobenzoyl disulphide**, *o*-hydroxy-, and its acetyl derivative (HÖHN and BLOCH), A., i, 49.

**Thiocarbamide**, condensation of, with esters of allylmalonic acid (JOHNSON and HILL), A., i, 502.

**ψ-Thiocarbamides**, aromatic, and their conversion into aryl orthothiocarbonates (ARNDT), A., i, 918.

**trans-β-Thiocarbiminoacrylic acid** (JOHNSON and SHEPARD), A., i, 924.

**Thiocarbonic acid**, chloro-, methyl and propyl esters (DELÉPINE), A., i, 944.

**Thiochroman**. See Tetrahydrobenzthiopyran.

**Thiocyanates**, aromatic, action of ammonia on (STRZELECKA), A., i, 196. estimation of (RONNET), A., ii, 938.

**Thiodinaphthanthraquinonylamine** (SCHOLL, SEER, and TRITSCH), A., i, 559.

**Thiodiphenylamine-2:7-diphthaloylic acid** (SCHOLL and SEER), A., i, 558.

**Thiodiphenylenephenethylsulphonium platinichloride** (HILDITCH), T., 1096.

**Thioformhydroxamic acid**, metallic salts and benzyl ester of (CAMBI), A., i, 429.

**Thioglycylglycinethioamide** (JOHNSON and BURNHAM), A., i, 712.

**Thiohydantoin** and its potassium salt (KOMATSU), A., i, 683.

"**Thioindigo**." See Bisoxythionaphthen.

**2-Thiol-4(or 5)-aminomethylglyoxaline** and its salts (PYMAN), T., 672; P., 91.

**Thiolbenzene**, 4:6-dichloro-1:3-dichloro-, and *o*-nitrochloro- (ZINCKE), A., i, 369.

**5-Thiol-*o*-cresol**, 3-bromo-, and its diacetyl derivative (ZINCKE and BRUNE), A., i, 197.

**Thioldiphenyl**, 4:4'-dichloro- (ZINCKE), A., i, 369.

**β-2-Thioglyoxaline-4-acrylic acid** (BARGER and EWINS), T., 2338; P., 305.

**α-Thiol-*p*-methoxycinnamic acid**, disulphide and its benzyl derivative (BUTSCHER), A., i, 333.

**Thiophenylglyoxylic acid**, phenylhydrazone of, and its derivatives (AUWERS and MÜLLER), A., i, 586.

**Thiophthalic acid**, esters of (REISSERT and HOLLE), A., i, 981.

**2-Thiol-4(or 5)-thiocarbamidomethylglyoxaline** (PYMAN), T., 672.

**γ-Thiol-*n*-valerylcarbamide** (JOHNSON and HILL), A., i, 503.

**Thionaphthen derivatives**, preparation of (KALLE & Co.), A., i, 657.

**Thionaphthen-2-aldehyde**, 3-hydroxy-, and its derivatives (FRIEDLÄNDER and KIELBASINSKI), A., i, 1022.

**Thionaphthen-3-aldehyde**, 2 hydroxy-, and its derivatives (FRIEDLÄNDER and KIELBASINSKI), A., i, 1023.

**(1)-Thionaphthen-2-carboxylic acid**, 3-hydroxy-, preparation of alkylthio- and alkylthio- derivatives of (KALLE & Co.), A., i, 666.

**Thionaphthenphenylosotriazole** (AUWERS and MÜLLER), A., i, 587.

**Thionaphthenquinone**, phenylhydrazones and osazone of (AUWERS and MÜLLER), A., i, 586.

**3-(1')-Thionaphthenyl-ψ-indole-2-anilide** (PUMMERER and GÖTTLER), A., i, 232.

**3-(1')-Thionaphthenyl-ψ-indole-*p*-dimethylamino-2-anil** (PUMMERER and GÖTTLER), A., i, 232.

**Thionates**. See under Sulphur.

**Thiobenzoic acid**, methyl ester (DELÉPINE), A., i, 768.

**Thionisobutyric acid**, methyl and ethyl esters (DELÉPINE), A., i, 768.

**Thioncarbonic acid**, diphenyl ester (CHEMISCHE FABRIK LADENBURG), A., i, 438.

**3-Thion-1:4-diphenyl-2-methylurazole** (BUSCH and LIMPACH), A., i, 335.

**Thionycyclohexoic acid**, methyl ester (DELÉPINE), A., i, 768.

**Thionoctic acid**, methyl ester (DELÉPINE), A., i, 768.

**Thionisovaleric acid**, methyl ester (DELÉPINE), A., i, 768.

**Thionyl chloride**. See under Sulphur.

**Thiophen 2-aldehyde**, preparation and derivatives of (GRISHKEWITSCH-TROCHIMOWSKY), A., i, 481.

**Thiophenoquinones**, constitution of (POSNER), A., i, 554.

**Thiophosphoric acid**. See under Phosphorus.

**2-Thiopyrimidine-5-carboxylic acid**, 6-amino-, and its ethyl ester and hydrochloride (JOHNSON and AMBLER), A., i, 576.

**Thiopyrine**. See 1-Phenyl-2:3-dimethylpyrazolone, 2:5-thio-.

**ψ-Thiopyrine**. See 5-Methylthio-1-phenyl-3-methylpyrazole.

**Thioquindoline** and its salts (NOELTING and STEUER), A., i, 165.

**Thioquindolinecarboxylic acid** (NOELTING and HERZBAUM), A., i, 917.

**Thiosemicarbazylcamphoformeneamine-carboxylactimide** (TINGLE and BATES), A., i, 55.

**Thiosemicarbazylecamphoformeneamine carboxylic acid** and its ethyl ester (TINGLE and BATES), A., i, 54.

**Thiosulphates.** See under Sulphur.

**Thioxanthenol**, constitution of (HILDITCH and SMILES), T., 156.

**Thioxanthenyl** chloride and oxide (HILDITCH and SMILES), T., 158; P., 3.

**Thioxanthone**, synthesis of derivatives of (CHRISTOPHER and SMILES), T., 2046; P., 265.

**Thioxanthone**, 2-amino-, and hydroxy- (CHRISTOPHER and SMILES), T., 2048.

bromo-, and chlorohydroxy-, and its sodium salt (MARDEN and SMILES), T., 1856.

1:4-dihydroxy- (CLARKE and SMILES), T., 1538; P., 212.

2:3:4-trihydroxy-, synthesis of, and its trimethyl ether (ULLMANN and SONE), A., i, 739.

**Thioxanthones**, nitro-, preparation of (FARBENFABRIKEN VORM. F. BAYER & CO.), A., i, 450.

**Thioxanthonium** chloride and ferrichloride (HILDITCH and SMILES), T., 157; P., 3.

**Thomsonite** from New Jersey (CANDFIELD), A., ii, 615.

**Thorium** and its disintegration products (LESLIE), A., ii, 1048.

transport of the active deposit of (WELLISCH), A., ii, 358.

$\beta$ -rays from the active deposit of (V. BAAYER, HAHN, and MEITNER), A., ii, 567.

$\gamma$ -rays of (RUSSELL and SODDY), A., ii, 88.

biology of (ROSEL), A., ii, 1117; (v. BOLTON), A., ii, 1118.

emanation, molecular weight of (LESLIE), A., ii, 843.

salts, action of the radium emanation on (HERSCHFINKEL: RAMSAY), A., ii, 843.

**Thorium arsenates** (BARBIERI), A., ii, 207.

carbonates (CHAUVENET), A., ii, 806.

chloride, dissociation of the compound of ammonia with (CHAUVENET), A., ii, 586.

peroxide (CALZOLARI), A., ii, 404.

**Thorium**, detection and estimation of, by means of iodic acid (MEYER), A., ii, 825.

**Threoglobulin** of the pig, histidine in (KOCH), A., i, 406.

**Thujane** (TSCHUGAEFF and FOMIN), A., i, 72.

transformations of (KIJNER), A., i, 996.

**Thujene**, bromides of (KIJNER), A., i, 72.

**Thujenes**, reduction of (TSCHUGAEFF and FOMIN), A., i, 72.

**Thujorodin** (TSVETT), A., i, 395.

$\beta$ -**Thujyl alcohol**. See Tanacetyl alcohol.

**Thujylhydrazine** (KIJNER), A., i, 71.

**Thulium**, elements present in (v. WELS-BACH), A., ii, 607.

and its salts (JAMES), A., ii, 891.

**Thyme**, Dalmatian white, constituents of the oil of (PICKLES), P., 285.

**Thymic acid** (STEUDEL and BRIGL), A., i, 342.

**Thymol**, new isomerides of (GUILLAIN), A., ii, 318.

diethylaminoethyl carbonate and its salts and chlorocarbonate (EINHORN and ROTHRAUF), A., i, 704.

$\beta$ -**Thymomenthol** (HENDERSON and BOYD), T., 2161.

**Thymomenthone** (MURAT), A., i, 890.

**Thymomethyl oxalate** (HENDERSON and BOYD), T., 2160; P., 276.

**Thymus**, proteolytic changes in the (RODIN), A., ii, 1112.

**Thyroid**, constituents of the (LOHMANN), A., ii, 630.

internal secretion of the (ASHER and FLACK), A., ii, 55.

influence of the, on enzyme action (JUSCHTSCHENKO), A., ii, 1112.

possible vicarious relationship between the pituitary and the (SIMPSON and HUNTER), A., ii, 1112.

estimation of iodine in the (SEIDELL), A., ii, 926.

**Tibicen septendecim**, pigmentation of (GORTNER), A., ii, 908.

**Tiglylbenzene**. See Phenyl  $\alpha$ -methyl-propenyl ketone.

**Tilasite** from India (SMITH and PRIOR), A., ii, 1103.

**Tilia europea**, phytosterol and its derivatives from (KLOBB and GARNIER), A., i, 972.

**Timarcha tenebricosa**, composition of the secretion of (CARLIER and EVANS), A., ii, 908.

**Tin**, electrochemistry of (FOERSTER and YAMASAKI), A., ii, 576.

vacuum distillation of (TIEDE and FISCHER), A., ii, 731.

the system lead, silver and (PARRAVANO), A., ii, 281.

action of seltzer water on (BARILLE), A., ii, 889.

compounds of, with arsenic (JOLIBOIS and DUPUY), A., ii, 612; (PARRAVANO and DE CESARIS), A., ii, 613.

chlorides, compounds of, with antipyrine (ASTRE and VIDAL), A., i, 399.

**Tin alloys**, with antimony (KONSTANTINOFF and SMIRNOFF), A., ii, 1096.

**Tin alloys**, with cerium (VOGEL), A., ii, 1090.  
 with copper and manganese, magnetic properties of (ROSS and GRAY), A., ii, 183.  
 with lead (MAZZOTTO), A., ii, 889.  
 with lead and antimony (LOEBE), A., ii, 204.  
 with mercury and silver (JOYNER), T., 195; P., 5.  
 with tellurium (KOBAYASHI), A., ii, 40.  
 with zinc and lead (LEVI-MALVANO and CECCARELLI), A., ii, 1088, 1089.  
 analysis of (KETTREIBER), A., ii, 158.

**Tin tetrahalides**, compounds of, with aldehydes (PFEIFFER, FRIEDMANN, GOLDBERG, PROS, and SCHWARZKOPF), A., i, 789.

**Stannic bromide**, latent heat of fusion of (TOŁŁOCZKO and MEYER), A., ii, 187.

**tetrachloride**, compounds of, with *o*-hydroxy-ketones (PFEIFFER, GOLDBERG, and KUNTNER), A., i, 899.

**Stannous chloride**, compounds of, with ammonia (SOFIANOPOULOS), A., ii, 403.  
 salts, detection of (DE GUZMÁN CANANCIO), A., ii, 825.

**Tin organic compounds** (PFEIFFER, PRADE, and REKATE), A., i, 595; (EMMERT and ELLER), A., i, 846.  
 halides, pyridine compounds of (PFEIFFER, FRIEDMANN, LEHNARDT, LUFTENSTEINER, PRADE, and SCHNURMANN), A., i, 746.  
 diethyl, preparation of pure (PFEIFFER, PRADE, and REKATE), A., i, 595.  
**Stanni-di-acetic acid**, *di*-iodo-, ethyl ester (EMMERT and ELLER), A., i, 846.  
**Stanni-di-*o*-benzoic acid**, *di*-iodo-, ethyl ester (EMMERT and ELLER), A., i, 846.

**Tin**, estimation of, in tin-plate (BEVERIDGE), A., ii, 543.  
 separation of, and platinum (WÖHLER and SPENZEL), A., ii, 338.

**Tin ores**, decomposition of refractory (LORAM), P., 60.

**Tin-plate**, estimation of tin in (BEVERIDGE), A., ii, 543.

**Tinstone**, solution of (GILBERT), A., ii, 71.

**Tissues**, action of radium on normal (GRÜNBAUM and GRÜNBAUM), A., ii, 132.  
 introduction of radium into the (HARET, DANNE, and JABOIN), A., ii, 418.  
 irritable, relation of stimulation to changes of permeability in (LILLIE), A., ii, 750.

**Tissues**, mammalian, necessity of oxygen for growth of (LOEB and FLEISCHER), A., ii, 1007.  
 muscular, of frogs, influence of different substances on the gaseous exchange of surviving (THUNBERG), A., ii, 56.  
 imbibition phenomena in, during rigor mortis (v. FÜRTH and LENK), A., ii, 750.  
 myeloid, the oxydase reaction in (DUNN), A., ii, 58.  
 nervous, swelling of (BAUER), A., ii, 1006.  
 reducing action of (STRASSNER), A., ii, 57.  
 hydrolysis of esters in (RONA), A., ii, 627.  
 detection of carbon monoxide in, after death (DE DOMINICIS), A., ii, 439.  
 detection of guanine in (DE GIACOMO), A., ii, 132.  
 estimation of sulphur and phosphorus in (WOLF and ÖSTERBERG), A., ii, 67.  
 See also Animal, Avian, and Mammalian tissues.

**Titanium** (STÄHLER and BACHRAN), A., ii, 1096.

**Titanium alloys** with iron, analysis of, rich in silicon (TRAUTMANN), A., ii, 661.

**Titanium chloride**, use of, in volumetric analysis (KNECHT and HIBBERT), A., ii, 76.  
 ammonium and potassium formates (STÄHLER and BACHRAN), A., ii, 1097.

**Pertitanic acid**, salts of, with amines (KUROWSKI and NISSENMANN), A., i, 183.

**Titanium**, estimation of, colorimetrically (WELLS), A., ii, 444; (GAUTIER), A., ii, 1035.  
 separation of (MÜLLER), A., ii, 940.  
 separation of, from the heavy metals (BORNEMANN and SCHIRMEISTER), A., ii, 231.

**Toad poison**. See Poison.

**Toadstool**, muscarine from the (HONDA), A., i, 807.

**Tobacco**, estimation of nicotine in (v. DEGRAZIA), A., ii, 671; (MELLET), A., ii, 672; (KOENIG), A., ii, 672, 1143; (ESSNER : TÓTH), A., ii, 943.

**Tobacco-juice**, estimation of nicotine in (SCHRÖDER), A., ii, 163, 552; (KISSLING : ULEX), A., ii, 344; (TÓTH : KISSLING : LEISTER), A., ii, 345.

**Tobacco smoke**, cyanogen compounds in (TÓTH), A., ii, 148, 1127.

**Tolane**, *oo'*-diamino-, and *oo'*-dinitro- (KLEGL and HAAS), A., i, 433.

(*Tolyl compounds, Me=1.*)

**o-Tolhydrityltriphenylcarbinol** (GUYOT and VALLETTE), A., i, 653.

**2-o-Tolidino-a-naphthaquinone** and its acetyl derivative (PUMMERER and BRASS), A., i, 655.

**p-Tolualdehyde**, dimeride of (ODDO and DEL ROSSO), A., i, 443.

**p-Tolualdehyde-p-methoxyphenylhydrazone** (PADOA and SANTI), A., i, 1029.

**3-Tolualdehyde-5-sulphonic acid**, 4-hydroxy- (FARBENFABRIKEN VORM. F. BAYER & CO.), A., i, 459.

**Toluene**, absorption spectra of chlorine and bromine derivatives of (PURVIS), T., 1699; P., 218.

absorption spectra of iodine derivatives of (PURVIS), T., 2318; P., 280.

sulphonation of (HOLEMAN, CALAND, VAN DER LINDEN, and WIBAUT), A., i, 849.

action of sulphur monochloride on (BÖESEKEN and KONING), A., i, 532.

**Toluene**, *o*-, *m*-, and *p*-chloro-, absorption spectra of (BALY), T., 856; P., 72.

2:3-di-iodo-5-nitro-, 2:3:4-, and 3:5:6-tri-iodo-, 3:4:5:6-tetraiodo-, and pentaiodo- (WHEELER and HOFFMAN), A., i, 28.

2:5-di-iodo-3-, and 4-nitro-, 2:4:6-tri-iodo-, and 2:3:5:6-tetraiodo- (WHEELER and BRAUTLECHT), A., i, 27.

*w*-nitro- (*phenylnitromethane*), preparation of (NEOGI and ADHICARY), A., i, 120.

spontaneous decomposition of (HEIM), A., i, 28.

condensation of with benzaldehyde (HEIM), A., i, 717.

*s*-trinitro-, additive compounds of phenolic ethers with (SÜDBOROUGH and BEARD), T., 215; P., 5.

additive compound of isoapirole and, crystallography of (BOERIS), A., i, 290.

2-nitro-6-hydroxylamino-, new forms of (BRAND), A., i, 714.

**2-p-Tolueneazo-5-chlorobenzoic acid** (FREUNDLER), A., i, 758.

**4-Tolueneazo-m-cresol** (MC PHERSON and BOORD), A., i, 818.

**4-o-Tolueneazo-5-hydroxy-3-methyliso-oxazole** (BÜLOW and HECKING), A., i, 245.

**4-o-, and p-Tolueneazo-5-hydroxy-3-methylpyrazole** (BÜLOW and HECKING), A., i, 404.

**4-o-Tolueneazo-5-hydroxy-1-phenyl-3-methylpyrazole** (BÜLOW and HECKING), A., i, 405.

(*Tolyl compounds, Me=1.*)

**4-p-Tolueneazo-5-hydroxy-1-phenyl-pyrazole-3-acetic acid**, and its ethyl ester (BÜLOW and GÖLLER), A., i, 1043.

**4-o- and p-Tolueneazo-3-phenyliso-oxazolone**, and *o*-, and *m*-nitro-derivatives of the *p*-compound (MEYER), A., i, 341.

**2-p-Tolueneazo-*m*-toluic acid** (FREUNDLER), A., i, 758.

**4-Tolueneazo-*m*-tolyl benzoate** (MC PHERSON and BOORD), A., i, 818.

**Toluene-p-diazonium hydroxide**, action of ethyl alcohol on (ROBERTS and ALLEMAN), A., i, 369.

**Toluenesulphonamides**, fusion of, with 1-phenyl- or 1-*p*-tolyl-2:3-dimethyl-5-pyrazolone (VOSWINKEL), A., i, 498.

**4-p-Toluenesulphonamidoanthraquinone-2:1-acridone** (ULLMANN and BILLIG), A., i, 491.

**Toluene-*m*-, and *p*-sulphonyl chlorides**, *ω*-chloro-, *ω*-2-dichloro-, and *ω*-6-dichloro- (BADISCHE ANILIN- & SODA-FABRIK), A., i, 850.

**4-Toluenesulphonylaminotoluene**, dinitro-derivatives of (REVERDIN and DE LUC), A., i, 38.

**1-p-Toluenesulphonylanilinoanthraquinone** (ULLMANN and FODOR), A., i, 467.

**1-p-Toluenesulphonylmethylamino-anthraquinone** (ULLMANN), A., i, 136; (ULLMANN and FODOR), A., i, 466.

**Toluene-p-sulphonyl-1:6-dinitro-*β*-naphthylamine** (MORGAN and MICKLETHWAIT), P., 326.

**1-p-Toluenesulphonylphenylamino-anthraquinone** (ULLMANN), A., i, 136.

*as* **Toluene-p-sulphonyl-*m*- and *p*-phenylenediamines** (MORGAN and MICKLETHWAIT), P., 326.

**p-Toluene-β-triazoethylsulphonamide** (FORSTER and NEWMAN), T., 1280; P., 154.

**Toluic acid, dihydroxy- (*hydroxyhomosalicylic acid*)**, constitution of (SCHMID), A., i, 780.

**m-Tolue acid**, nitration of (WHEELER and HOFFMANN), A., i, 50.

**m-Tolue acid**, 5-bromo-6-hydroxy- (MOIR), P., 227.

2-nitroso- (FREUNDLER), A., i, 758.

2-iodo-, and its methyl ester (MAYER), A., i, 870.

**p-Tolue acid, *o*-amino-, acetyl derivative** (KUNCKELL), A., i, 991.

*ω*-iodo- (KNOLL & CO.), A., i, 432.

(*Tolyl compounds, Me=1.*)

***o-Toluidine***, 3-iodo-5-nitro- (WHEELER and HOFFMAN), A., i, 28.  
5-iodo-3, and 4-nitro-, and 4:5-di-iodo- (WHEELER and BRAUTLECHT), A., i, 27.

***m-Toluidine***, 2:5-di-iodo-, and 2:5:6-tri-iodo- (WHEELER and BRAUTLECHT), A., i, 27.  
5:6-di-iodo-, 4:5:6-tri-iodo-, and 2:4:5:6-tetraiodo- (WHEELER and HOFFMAN), A., i, 28.

***o- and p-Toluidine***, compounds of, with antimony trichloride (MAY), T., 1384; P., 125.

***p-Toluidine***, 2:5-di-iodo- (WHEELER and BRAUTLECHT), A., i, 28.

***Toluidine*** series, pharmacological and chemo-therapeutic studies in the (HILDEBRANDT), A., ii, 514.

***o-p-Toluidinoacetophenone***, derivatives of (BUSCH and HEFELE), A., i, 583.

***1-p-Toluidinoanthraquinone***, *o*-nitro- (ULLMANN and FODOR), A., i, 468.

***4-p-Toluidinoanthraquinone-2:1-acridone*** (ULLMANN and BILLIG), A., i, 491.

***p-Toluidino-1-anthraquinone-2-carboxylic acid*** (BADISCHE ANILIN- & SODA-FABRIK), A., i, 980.

***β-p-Toluidino-γ-phenoxy-α-p-chlorophenyl crotononitrile*** (v. WALTHER and HERSCHEL), A., i, 238.

***5-p-Toluidino-1-phenyl-3-methyl-pyrazole***, 4-amino-, and its derivatives (MICHAELIS and RISSE), A., i, 1039.

***o- and p-Toluidinotartronic acid***, ethyl esters (CURTISS, HILL, and LEWIS), A., i, 367.

***p-Toluoinhydrazine*** (CURTIUS and KASTNER), A., i, 325.

***o-Toluosulphonoquinone***, 5-bromo- (ZINCKE and KEMPF), A., i, 287.

***2-p-Toluoylbenzoic acid***, 3(6)- and 4(5)-amino-, and 3(6)- and 4(5)-chloro- (BADISCHE ANILIN- and SODA-FABRIK), A., i, 885.

***o-Toloylbenzoylbenzene*** (GUYOT and VALLETTE), A., i, 652.

***Toluoylboric acid***, *tri-o-*, *m*-, and *p*-hydroxy- (COHN), A., i, 641.

***o-Toluoylnaphthoylbenzene*** (GUYOT and VALLETTE), A., i, 654.

***3-p-Toluoylpicolinic acid***, preparation of (HALLA), A., i, 1021.

***p-Toluoyl-p-tolylazomethylene***. See *Azo-p-tolil*.

***p-Toluoyl-p-tolylhydrazimethylene***. See *Hydrazi-p-tolil*.

***Toluquinol***, *o*-chloro- (RAIFORD), A., i, 994.

(*Tolyl compounds, Me=1.*)

***Toluquinolidiphenylacetic acid, β-lactone*** of (STAUDINGER and BEREZA), A., i, 461.

***Toluquinone***, action of magnesium methyl iodide on (BAMBERGER and BLANGEY), A., i, 883.

***Toluquinone***, 2:6-di<sup>b</sup>bromo-4-chloro-imino-, *o*-chloro-, 2- and 4-chloro-6-chloroimino-, and 4-chloro-3-chloro-imino- (RAIFORD), A., i, 993.

***3:4-Toluquinone*** and its reactions with substituted hydrazines (McPHERSON and BOORD), A., i, 818.

***2:3- and 3:4-Toluquinone (homo-o-benzoquinone)*** and their bimolecular forms (WILLSTÄTTER and MÜLLER), A., i, 728.

***p-Toluquinonedichlorodi-imide*(ORLOFF)**, A., i, 89.

***Tolusafranine***, acetyl derivative of (ORLOFF), A., i, 89.

***o-Tolylacetaldehyde*** and its oxime and thiosemicarbazone (KRONIK), A., i, 210.

***d-p-Tolylacetylalanine*** (DAKIN), A., ii, 416.

***p-Tolylacrylic acid***, *α*-amino-, benzoyl derivative (DAKIN), A., ii, 416.

***α-p-Tolylacrylic acid***, *β*-chloro-, and its ethyl ester (AUWERS), A., i, 299.

***p-Tolylalanine*** and its hydrochloride (DAKIN), A., ii, 416.

***o-, m-, and p-Tolylammonium osmium chlorides*** (GUTBIER and WALBINGER), A., i, 191.

***platinium-bromides*** (GUTBIER, BAURIEDEL, and OBERMAIER), A., i, 33.

***β-p-Tolyl-Δ<sup>a</sup>-amylene*** (GRISHKEWITCH-TROCHIMOWSKY), A., i, 291.

***Tolylanisylacetic acid***, *p*-hydroxy-, lactone of (STOERMER and DECKER), A., i, 666.

***p-Tolylbenzoylalanine*** (DAKIN), A., ii, 416.

***β-p-Tolyl-Δ<sup>a</sup>-butylene*** (GRISHKEWITCH-TROCHIMOWSKY), A., i, 291.

***β-p-Tolyl-Δ<sup>β</sup>-butylene*** (RUPE and BÜRGIN), A., i, 447.

***o-, m-, and p-Tolyl isobutyl ketone*** and their semicarbazones (SENDERENS), A., i, 135.

***1-p-Tolyl-2:3-dimethylbenzimidazolol***, 4:7-dinitro-6-hydroxy- (MELDOLA and KUNTZEN), T., 1301.

***1-p-Tolyl-2:3-dimethylbenzimidazolone***, 4:7-dinitro-6-hydroxy- (MELDOLA and KUNTZEN), T., 1300.

***1-p-Tolyl-2:3-dimethylbenzimidazolium hydroxide***, 4:7-dinitro-6-hydroxy-, and its salts (MELDOLA and KUNTZEN), T., 1300.

(*Tolyl compounds, Me=1.*)

**1-p-Tolyl-2:3-dimethyl-5-pyrazolone**, fusion of, with toluene-sulphonamides (VOSWINKEL), A., i, 498.

**2:4-Tolylendiamine**, 3:5-dinitro-, acetyl derivative of (BLANKSMA), A., i, 39.

**p-Tolyl ether**, tetrabromo- (COOK), A., i, 284.

ethyl ether, action of sulphuric acid on (ROBERTS and ALLEMAN), A., i, 369.

glycidic ether (LES ETABLISSEMENTS POULENC FRÈRES and FOURNEAU), A., i, 291.

methyl ether, *o*-acetyl amino- (KALLE & Co.), A., i, 666.

*o*-, and *m*-ido- and iodoso- derivatives of (WILLGERODT and SCHLOSS), A., i, 715.

**p-Tolyl ethoxymethyl ketone** and its derivatives (BLAISE and PICARD), A., i, 175.

**$\beta$ -p-Tolyl- $\beta$ -ethylhydrylic acid** and its silver and barium salts (GRISHKEWITSCH-TROCHIMOWSKY), A. i, 290.

**2-*o*-, and *p*-Tolyl-3-ethylisoindolinone**, 3-hydroxy- (KUHARA and KOMATSU), A., i, 206.

*o*-, *m*-, and *p*-Tolyl ethyl ketone, preparation of, and their semicarbazones (SENDERENS), A., i, 134.

***m*-Tolylglyoxylic acid**, 4-hydroxy-, phenylhydrazone of, and its benzoyl derivative, and phenylhydrazone of its phenylhydrazide (AUWERS and APITZ), A., i, 585.

**$\delta$ -p-Tolylheptane- $\alpha\beta\delta$ -triol** (GRISHKEWITSCH-TROCHIMOWSKY), A., i, 291.

**$\gamma$ -p-Tolylhexane- $\gamma\epsilon$ -triol** (GRISHKEWITSCH-TROCHIMOWSKY), A., i, 290.

**2:5-*o*-, and *p*-Tolylimino-1-phenyl-2:3-dimethylpyrazole** and their salts (MICHAELIS and MENTZEL), A., i, 1042.

**2:5-*p*-Tolylimino-1-phenyl-2:3-dimethylpyrazole**, *o*-nitro-, and its salts (MICHAELIS, WURL, and DOEPMANN), A., i, 1041.

**5-*p*-Tolylimino-1-phenyl-3-methylpyrazolone** and its derivatives and 4-oximino-, and its hydrochloride (MICHAELIS and RISSE), A., i, 1039.

**2-*o*-Tolylisoindolinone**, 3-hydroxy- (KUHARA and KOMATSU), A., i, 206.

**$\beta$ -p-Tolyl- $\gamma$ -methyl- $\Delta$ -butylene** (GRISHKEWITSCH-TROCHIMOWSKY), A., i, 291.

*o*-, *m*-, and *p*-Tolyl- $\alpha$ -methylisobutyramide (HALLER and BAUER), A., i, 726.

**$\alpha$ -p-Tolyl- $\alpha$ -methylbutyric acid**, synthesis of (RUPE and BÜRGIN), A., i, 446.

*o*-, *m*-, and *p*-Tolyl- $\alpha$ -methylisobutyric acid (HALLER and BAUER), A., i, 726.

(*Tolyl compounds, Me=1.*)

**$\gamma$ -p-Tolyl- $\gamma$ -methylisocrotonic acid** (RUPE and STEINBACH), A., i, 293.

***p*-Tolylmethylethylcarbinol** and its polymeride (RUPE and BÜRGIN), A., i, 446.

***p*-Tolyl methyl ketone**, action of carbon disulphide and potassium hydroxide on (KELBER and SCHWARZ), A., i, 740.

*o*-, *m*-, and *p*-Tolyl methyl ketones, preparation of, and their semicarbazones (SENDERENS), A., i, 134.

***p*-Tolylmethylnitrosoamine**, 2:5-dinitro- and 2:3:6-trinitro- (MORGAN and CLAYTON), T., 1942.

**3-Tolyl-2-methyl-4-quinazolone**, *m*- and *p*-amino-, 3:7-diamino-, and 3-amino-7-acetyl amino- (BOGERT, GORTNER, and AMEND), A., i, 581.

*as*-*o*- and *p*-Tolylphthalimide (KUHARA and KOMATSU), A., i, 206.

***p*-Tolylpropionamide** (BUCHNER and SCHULZE), A., i, 52.

***a*-p-Tolylpropionic acid**,  $\beta\beta$ -dichloro-, and its ethyl ester (AUWERS), A., i, 299.

***p*-Tolyl- $\beta$ -propylhydrylic acid** and its barium and sodium salts (GRISHKEWITSCH-TROCHIMOWSKY), A. i, 291.

***p*-Tolyl- $\beta$ -isopropylhydrylic acid** and its salts (GRISHKEWITSCH-TROCHIMOWSKY), A., i, 291.

*o*-, *m*-, and *p*-Tolyl propyl ketone, and their semicarbazones (SENDERENS), A., i, 134.

*o*-, *m*-, and *p*-Tolyl isopropyl ketone, and their semicarbazones (SENDERENS), A., i, 135.

***p*-Tolylpyruvic acid** and its azlactone (WAKEMAN and DAKIN), A., ii, 416.

***p*-Tolylsulphonic acid**, methyl ester (HILDITCH), T., 238.

***p*-Tolyl- $\psi$ -thiocarbamide** and its salts and nitroso- (ARNDT), A., i, 918.

**1-p-Tolyl-2:4:6-trimethylpyridinium perchlorate** (v. BAAYER and PICCARD), A., i, 901.

***p*-Tolyltrifluoromethylsulphone** (v. MEYER and FISCHER), A., i, 121.

*o*-**Tolyl-6-urethane**, 2:4-dibromo-3-hydroxy- (RAIFORD), A., i, 993.

*p*-**Tolyl-4-urethane**, 2:6-dibromo-3-hydroxy- (RAIFORD), A., i, 993.

**$\gamma$ -p-Tolylvaleric acid** and its *p*-toluidide (RUPE and STEINBACH), A., i, 293.

**$\gamma$ -p-Tolyl- $\gamma$ -valerolactone** (RUPE and STEINBACH), A., i, 293.

***m*-Tolyl-*m*-xylyl ketone** (SEER), A., i, 386.

**Touchstone**, assay of silver by the (STEINMANN), A., ii, 658.

**Toxicity** of organic compounds (STADLER), A., ii, 223.  
of the ovaries of fish (MCCRUDDEN), A., ii, 421.  
of potassium and sodium salts, antagonism in the (LOEB and WASTE-NEYS), A., ii, 420.

**Transport numbers.** See under Electrochemistry.

*Trevesia sundaca* leaves, saponin from (FLIERINGA), A., i, 480.

**Triacetin, trichloro-** (ALPERN and WEIZMANN), T., 84.

**Triacetoxybenzophenone** (BARGELLINI and LEONARDI), A., i, 902.

**1:2:8-Triacetoxychrysene** (BESCHKE and DIEHM), A., i, 890.

**Triacetylglucosamine**, bromo-, hydrobromide (IRVINE, McNICOLL, and HYND), T., 256; P., 23.

**Triacetyl methylglucosamine hydrobromide** (IRVINE, McNICOLL, and HYND), T., 258; P., 23.

**Trialkylacetophenones**, action of organo-magnesium derivatives on (LUCAS), A., i, 636.

**Trialkylammonium nitrites** (NEOGI), T., 1598; P., 208.

**Triantipyrene ferric thiocyanate** (BARBERI and PAMPANINI), A., i, 225.

**Triaryl methyls** (SCHLENK and HERZENSTEIN), A., i, 122.

**$\alpha$ ,  $\beta$ ,  $\gamma$ -Triazodihydrocarvone** and their semicarbazones (FORSTER and VAN GELDEREN), T., 2063; P., 195.

**$\beta$ -Triazoethylamine** and its hydrochloride and benzoyl derivative (FORSTER and NEWMAN), T., 1278; P., 154.

**$\beta$ -Triazoethylcarbamide** (FORSTER and NEWMAN), T., 1281; P., 154.

**$\beta$ -Triazoethylphthalimide** (FORSTER and NEWMAN), T., 1279; P., 154.

**$\beta$ -Triazoethylquinolinium iodide** and platinichloride (FORSTER and NEWMAN), T., 1282.

**Triazole group** (FORSTER and VAN GELDEREN), T., 239, 2059; P., 19, 195; (FORSTER and NEWMAN), T., 244, 1277; P., 19, 154.

**Triazole and its derivatives** (PELLIZZARI), A., i, 1035.

**1:2:3-Triazole-5-one-1-acetamide**, 4-dibromo- (CURTIUS), A., i, 167.

**$\beta$ -Triazo- $\beta$ -methylbutan- $\gamma$ -one** and its derivatives (FORSTER and VAN GELDEREN), T., 242; P., 19.

**$\beta$ -Triazo- $\beta$ -methylbutan- $\gamma$ -oxime** (FORSTER and VAN GELDEREN), T., 241; P., 19.

**3-Triazophenol**, 2:5-dinitro-4-acetyl-amino-, and its acetyl derivative (MELDOLA and KUNTZEN), T., 43.

**Tribenzylhydrazine hydrochloride** (FRANZEN and KRAFT), A., i, 817.

**Tribenzylidenehydrazinoacethydrazide** (CURTIUS and HUSSONG), A., i, 400.

**Tribenzylidenehydrazinodiacethydrazide** and *m*-chloro-, and *m*-nitro- (CURTIUS and HUSSONG), A., i, 400.

**Tribenzylmethylammonium salts** (EMDE and SCHELLBACH), A., i, 282.

**Tribenzylsulphinium sulphate** (FICHTER and SJÖSTEDT), A., i, 42.

**Triboiluminescence** (VAN ECK), A., ii, 563.

**Tricamphor- $\beta$ -sulphonic acid**, pyrogallol and phloroglucinol ethers (HILDITCH), A., i, 893.

**Tricarballylic acid**, formation of, and its imide (THOLE and THORPE), T., 1684; P., 219.

**Tricarbamylmelamine** (v. MEYER and NÄBE), A., i, 122.

**Tricyclic acid.** See Dehydrocamphenylic acid.

**1:2:8-Triethoxychrysene** (BESCHKE and DIEHM), A., i, 890.

**Triethylammonium osmichloride** (GUTBIER and MAISCH), A., i, 19.

rutheni-bromide and -chloride (GUTBIER and LEUCHS), A., i, 183.

telluri-bromide and -chloride (GUTBIER, FLURY, and MICHELER), A., i, 181.

nitrite (RAY and RAKSHIT) P., 264.

preparation and sublimation of (NEOGI), T., 1252; P., 71.

**1:3:7-Triethylcaffolide** (BILTZ and TOPP), A., i, 693.

**Triethylcarbinol** (DAVIES and KIPPING), T., 298.

**3:4:5-Triethylcarbonatophenylglyoxylo-nitrile** (FRANCIS and NIERENSTEIN), A., i, 644.

$\gamma\gamma\gamma$ -Triethylheptan- $\delta$ -ol and its phenylurethane (ZERNER), A., i, 950.

$\gamma\gamma\gamma$ -Triethylheptan- $\delta$ -one (ZERNER), A., i, 523, 950.

**Trifolianol** and its dibenzoyl derivative (SALWAY), T., 2155; P., 273.

**Triglycolamic acid**, production of, from glycine (SIEGFRIED), A., i, 775.

**Tri-2-hydroxy-1-hydronaphthamide** (SACHS and BRIGL), A., i, 719.

**Tri-indylmethane** colouring-matters (ELLINGER and FLAMAND), A., i, 329.

**Triketohydrindene hydrate** (RUHEMANN), T., 1306; P., 163; T., 1486; P., 210.

and its derivatives and relation to alloxan (RUHEMANN), T., 722; P., 97.

absorption spectra of, and its derivatives (PURVIS), T., 1953; P., 242.

**Triketohydrindene** hydrate, use of, in detection of proteins (ABDERHALDEN and SCHMIDT), A., ii, 674.

**Trimellitic acid**, esters and derivatives of (WEGSCHEIDER, PERNDANNER, and AUSPITZER), A., i, 130.

**Trimercuridiethylammonium** nitrite (RÄY and RAKSHIT), T., 1972; P., 220.

**2:4:5-Trimethoxyacetophenone**, oxime and semicarbazone of (BARGELLINI and AVRUTIN), A., i, 68.

**1:2:5-Trimethoxybenzene**, 4-nitroso- (FABINYI and SZÉKI), A., i, 856.

**3:4:5-Trimethoxybenzoic acid**, 2-nitro-, 2:6-dinitro-, and their silver and barium salts and methyl ester of the latter (THOMS and SIEBELING), A., i, 724.

**2:4:5-Trimethoxyphenone** and its phenylhydrazone (BARGELLINI and MARTEGANI), A., i, 966.

**4:5:4'-Trimethoxybenzophenone**, 2-hydroxy- (BARGELLINI and MARTEGANI), A., i, 966.

**$\alpha\gamma$ -Trimethoxy- $\Delta^{\beta}$ -butylene** (CLAISEN), A., i, 492.

**4:4':5'-Trimethoxychalkone**, 2' hydroxy- (BARGELLINI and AURELI), A., i, 856.

**2:4:5-Trimethoxycinnamic acid** (MOORE), T., 1047; P., 119.

**2:4:5-Trimethoxydeoxybenzoin** and its phenylhydrazone (BARGELLINI and MARTEGANI), A., i, 966.

**3:4:4'-Trimethoxydiphenylacetic acid** (BISTRZYCKI, PAULUS, and PERRIN), A., i, 869.

**3:4:4'-Trimethoxydiphenylacetonitrile** (BISTRZYCKI, PAULUS, and PERRIN), A., i, 869.

**3:4:6-Trimethoxy-8-hydroxyphenanthrene-9-carboxylic acid**, lactone of (PSCHORR and KNÖFFLER), A., i, 669.

**3:4:4'-Trimethoxy-2:2'-oxidostilbene- $\alpha'$ -carboxylic acid** (PSCHORR and KNÖFFLER), A., i, 669.

**2:4:5-Trimethoxy- $\beta$ -phenylpropionic acid** and its methyl ester (MOORE), T., 1048; P., 120.

**Trimethoxy- $\alpha$ -phthalic acid** and its derivatives (WINDAUS), A., i, 904.

**2:4:5-Trimethoxypropiophenone**, derivatives of (BARGELLINI and MARTEGANI), A., i, 855.

**oxime and semicarbazone** (BARGELLINI), A., i, 305.

**Trimethylacetophenone**, semicarbazone of (LUCAS), A., i, 636.

**1:3:6-Trimethylallantoin** (*caffoline*) (BILTZ and KREBS), A., i, 241.

**Trimethylamine**, formation of, by *Bacillus prodigiosus* (ACKERMANN and SCHÜTZE), A., ii, 61.

**Trimethylamine** in blood, urine and cerebrospinal fluid (DORÉE and GOLLA), A., ii, 212.

compound of, and cuprous thiocyanate (LANG), P., 140.

uranyl phosphate (BARTHE), A., i, 526.

estimation of, in urine (KINOSHITA), A., ii, 343; (CACCIA), A., ii, 550.

**$\gamma$ -Trimethylaminobutyric acid**,  $\alpha$ -hydroxy-, and its salts (FISCHER and GÖDDERTZ), A., i, 20.

**$\alpha$ -Trimethylamino- $\rho$ -indolepropionic acid**, methyl ester, iodide of (VAN ROMBURGH and BARGER), T., 2069; P., 258.

**Trimethylammonium** nitrite (RÄY and RAKSHIT), P., 72.

osmichloride (GUTBIER and MAISCH), A., i, 18.

tellurichloride (GUTBIER, FLURY, and MICHELER), A., i, 182.

nitrite (RÄY and RAKSHIT), T., 1473; P., 122.

**$\delta\delta$ -Trimethyl- $\Delta^{\alpha}$ -amylene**,  $\gamma$ -chloro-, and its acetyl derivative (UMNOVA), A., i, 250.

**Trimethylisoamylsilicane** (BYGDÉN), A., i, 846.

**Trimethyl dibromoethylammonium** perchlorate (HOFMANN and HÖBOLD), A., i, 608.

**$\alpha\beta$ -Trimethylbutaldehyde**,  $\alpha$ -hydroxy-, and its oxime (RICHARD), A., i, 8.

**Trimethyl-*n*-butylammonium** iodide and platinichloride (v. BRAUN), A., i, 611.

**Trimethylbutylsilicane** (BYGDÉN), A., i, 846.

**$\alpha\beta$ -Trimethylbutyric acid** (RICHARD), A., i, 7.

**$\alpha\beta\beta$ -Trimethylbutyric acid**,  $\alpha$ -hydroxy-, and its esters and amide (RICHARD), A., i, 8.

**Trimethylcarbinol**, properties of aqueous solutions of (DOROSCHEWSKY), A., i, 414.

boiling point of (DOROSCHEWSKY and POLJANSKY), A., i, 253.

cryoscopic, ebullioscopic and association constants of (ATKINS), T., 10.

**Trimethylctylylammmonium** iodide (v. BRAUN), A., i, 612.

**1:2:6-Trimethyl-4-chloromethylidihydro-pyridine-3:5-dicarboxylic acid**, ethyl ester (BENARY), A., i, 320.

**1:3:4-Trimethyl-1-dichloromethyl- $\Delta^{2:5}$ -cyclo-hexadiene**, 5-chloro-4-hydroxy- (AUWERS), A., i, 384.

**Trimethylcolchicinic acid**, salts and derivatives of (WINDAUS), A., i, 904.

**Trimethyldiglycylglycine** and its esters and their platinichlorides (ABDERHALDEN and KAUTZSCH), A., i, 954.

**2:2:5-Trimethyl-2:3-dihydro-*p*-benzo-quinone.** See 1:1:4-Trimethyl- $\Delta^3$ -cyclohexen-2:5-dione.

**3:5:6 Trimethyl-4:5-dihydropyridazine-4-carboxylic acid, ethyl ester** (KORSCHUN and ROLL), A., i, 502.

**1:1:2-Trimethylhydroresorcin** and its anilide and anhydride (CROSSLEY and RENOUE), T., 1105.

**Trimethylhydroresorcincarboxylic acid** (CROSSLEY and RENOUE), T., 1106.

**1:4:5 Trimethylhydrourouracil**, 4-bromo-5-hydroxy-, chlorohydroxy-, and 4:5-dihydroxy- (BREMER), A., i, 161.

**Trimethylene.** See *cycloPropane*.

**Trimethyleneprrole derivatives** (GHIGLIENO), A., i, 321.

**1:3:6 Trimethyl-8-ethylallantoin**, 7-thio- (BILTZ and KREBS), A., i, 242.

**$\alpha\beta\gamma$ -Trimethylglutaconic acid**, derivatives of (THOLE and THORPE), T., 2239.

**$\beta\beta\beta'$ -Trimethylguanidine** aurichloride (SCHENCK), A., i, 843.

**Trimethyl-*n*-heptylammonium hydroxide and iodide** (v. BRAUN), A. i., 611.

**1:1:4-Trimethylcyclo- $\Delta^{2:5}$ -hexadien-4-ol** (AUWERS and MÜLLER), A., i, 621.

**2:2:6 Trimethylhexahydrobenzaldehyde** (SKITA and PAAL), A., i, 449.

**Trimethylcyclohexane** (SKITA and RITTER), A., i, 272.

**1:1:2-Trimethylcyclohexan-3-ol** and its benzoyl derivatives (CROSSLEY and RENOUE), T., 1109.

**1:1:2 Trimethylcyclohexan-3-one** and its oxime and semicarbazone (CROSSLEY and RENOUE), T., 1110; P., 137.

**$\beta\gamma\epsilon$ -Trimethylhexan- $\beta\gamma\epsilon$ -triol**, synthesis and derivatives of (BOUVEAULT and LOCQUIN), A., i, 2; (BOUVEAULT and LEVALLOIS), A., i, 3.

**1:1:4-Trimethyl- $\Delta^3$ -cyclohexen-2:5-dione** and its derivatives (BAMBERGER and BLANGEY), A., i, 884.

**1:1:3-Trimethyl- $\Delta^5$ -cyclohexene, 5-chloro-** (SKITA and RITTER), A., i, 272.

**Trimethylcyclohexenone**, chloro-, and its derivatives (CROSSLEY and RENOUE), T., 1106.

**Trimethylhexylammonium hydroxide and iodide** (v. BRAUN), A., i, 611.

**1:7:9 Trimethylspiro-5:5-hydantoin** (*hypocaffeine*) and its decomposition (BILTZ and KREBS), A., i, 240.

**Trimethyl-leucylglycine** and its salts (ABDERHALDEN and KAUTZSCH), A., i, 528.

*iso***Trimethylmelamine** (DIELS and GOLLMANN), A., i, 956.

**Trimethyl-*n*-octylammonium hydroxide** (v. BRAUN), A., i, 612.

**Trimethylpentenylammonium iodide** (v. BRAUN), A., i, 613.

**Trimethylpropylammonium,  $\gamma$ -hydroxy-, chloride ( $\gamma$ -*homocholine*), synthesis and derivatives of** (BERLIN), A., i, 426, 771.

**1:1:2-Trimethyl-3-isopropylcyclobutane** (LEBEDEFF), A., i, 775.

**Trimethylpropylsilicane** (BYGDÉN), A., i, 846.

**2:4:6 Trimethylpyridine**, and its salts (GRISHKEWITSCH-TROCHIMOWSKY), A., i, 320.

**2:4:6-Trimethylpyridinium perchlorate** (v. BAEYER and PICCARD), A., i, 901.

**3:4:5-Trimethyl- $\alpha$ -pyrone**, 6-hydroxy- (THOLE and THORPE), T., 2240.

**2:4:6-Trimethylpyroxonium perchlorate** (v. BAEYER and PICCARD), A., i, 901.

**2:3:5-Trimethylpyrrole** (KNORR and HESS), A., i, 1019.

**2:3:5-Trimethylpyrrole-4-carboxylic acid** and its ethyl ester (KNORR and HESS), A., i, 1019.

**Trimethylpyruvic acid**, esters and derivatives of (RICHARD), A., i, 7.

**2:6:8-Trimethylquinoline**, salts of (JONES and EVANS), T., 338.

*mer***Trimethylquinonedi-imonium ferricyanide** (PICCARD), A., i, 569.

**2:5:5-Trimethyltetrahydrofuran** (LOSANITCH), A., i, 804.

**2:6:8-Trimethyltetrahydroquinoline**, salts and derivatives of (JONES and EVANS), T., 337.

**1:4:5-Trimethyluracil**, oxidation of (BREMER), A., i, 160.

**1:3:7-Trimethylisouric acid**, 5-chloro- (BILTZ), A., i, 168.

**Tri- $\alpha$ -naphthylcarbinol** (TSCHITSCHIBABIN), A., i, 969.

**Tri- $\alpha$ -naphthylmelamine** (v. MEYER and NÄBE), A., i, 122.

**Tri- $\alpha$ -naphthylmethane** (TSCHITSCHIBABIN), A., i, 436. compounds of (TSCHITSCHIBABIN), A., i, 969.

**Tri- $\alpha$ -naphthylmethane**, bromo-, and iodo- (TSCHITSCHIBABIN), A., i, 970.

**Trioses**, hydrolysis of, by enzymes (BIERRY), A., i, 354.

**Triphenetyl sulphonium dichromate** (HILDITCH), T., 1099.

**Triphenylacetic acid**, 2:4-, and 2:5-dihydroxy-, and their  $\gamma$ -lactones (STAUDINGER and BEREZA), A., i, 461.

**Triphenylacetone**, 4:4'-dihydroxy-, and its diacetyl derivative (VORLÄNDER, FRIEDBERG, VAN DER MERVE, ROSENTHAL, HUTH, and v. BODECKER), A., i, 867.

**Triphenylacetylphenylimino-chloride** (STAUDINGER, CLAR, and CZAKO), A., i, 625.

**Triphenylbenzene**, synthesis of (DEL-ACRE), A., i, 32.

**Triphenylbenzylmethane** (v. MEYER and FISCHER), A., i, 121.

**$\alpha\gamma$ -Triphenyl- $\gamma$ -butyrolactone** (REYNOLDS), A., i, 861.

**Triphenylisocarbamide** (CHEMISCHE FABRIK LADENBURG), A., i, 438.

**Triphenylcarbinol**, absorption spectra of salts of (MEYER and WIELAND), A., ii, 952.

action of amines on (GREEN and WOODHEAD), A., i, 481.

sodium derivative of (SCHLENK, MAIR, and BORNHARDT), A., i, 434.

**Triphenylcarbinol**, *o*-bromo-, and *o*-chloro- (TSCHITSCHIBABIN), A., i, 279.

*o*-bromo-, *o*-chloro-, and *di-p*-chloro-*o*- and *p*-bromo-, and their derivatives (GOMBERG and VAN SLYKE), A., i, 361.

**Triphenylcarbinol-4-carboxylic acid**, methyl ester (STAUDINGER and CLAR), A., i, 639.

**Triphenyl-*p*-chlorobenzylmethane** (v. MEYER and FISCHER), A., i, 121.

**Triphenyldihydrotriazole** (BUSCH and RUPPENTHAL), A., i, 87.

**1:2:4-Triphenyl-2:5-dihydro-1:2:3-triazole** and its derivatives (BUSCH and HEFELE), A., i, 583.

**Triphenylethylene glycol**, acetyl derivative of (PATERNO and FORLI-FORTI), A., i, 66.

**$\alpha\delta$ -Triphenylfulgide**, *d*:bromide of (STOBBE and BENARY), A., i, 380.

**1:4:5-Triphenylglyoxaline** and its salts (EVEREST and McCOMBIE), T., 1751; P., 209.

**Triphenylmethane**, preparation of derivatives of (FARBENFABRIKEN VORM. F. BAYER & CO.), A., i, 458; (SZÉKI), A., i, 634.

*o*-, *m*-, and *p*-bromo-, *o*-, and *p*-chloro-, and *p*-iodo (TSCHITSCHIBABIN), A., i, 278.

$\omega$ -nitro-, and  $\omega$ -nitroso- (SCHLENK, MAIR, and BORNHARDT), A., i, 434.

**Triphenylmethane-4-carboxylic acid**, chloride and anilide from (STAUDINGER and CLAR), A., i, 638.

*o*-chloro-, methyl ester and acid chloride of (STAUDINGER and CLAR), A., i, 639.

**Triphenylmethyl** (GOMBERG and VAN SLYKE), A., i, 361.

absorption spectra of (MEYER and WIELAND), A., ii, 952.

**Triphenylmethyl**, colour of, in relation to dilution (PICCARD), A., ii, 561.

**nitrite** (SCHLENK, MAIR, and BORNHARDT), A., i, 434.

*o*-, *m*-, and *p*-bromo-, and *o*-chloro-, bromides (TSCHITSCHIBABIN), A., i, 279.

**Triphenylmethylaniline**, *o*-bromo-, *o*-chloro-, and *di-p*-chloro-*o*- and *p*-bromo- (GOMBERG and VAN SLYKE), A., i, 361.

**Triphenylmethyl-4-carboxylanilide** (STAUDINGER and CLAR), A., i, 639.

**Triphenylmethyl-4-carboxylic acid**, methyl ester (STAUDINGER and CLAR), A., i, 639.

**Triphenylmethyldiphenylamine** (WIELAND and LECHER), A., i, 570.

**Triphenylmethyldi-*p*-tolylamine** (WIELAND and LECHER), A., i, 570.

**Triphenylmethylethyl sulphide** (v. MEYER and FISCHER), A., i, 121.

**1:4:5-Triphenyl-2-methylglyoxaline** and its salts (EVEREST and McCOMBIE), T., 1750; P., 209.

**s-Triphenylmethylmethylcarbamide** (v. MEYER and FISCHER), A., i, 120.

**Triphenylmethyl methyl sulphide** (v. MEYER and FISCHER), A., i, 121.

**Triphenylmethylphthalimide** (v. MEYER and FISCHER), A., i, 120.

**Triphenylmethylpiperidine** (v. MEYER and FISCHER), A., i, 120.

**Triphenylmethylpyrrole** (v. MEYER and FISCHER), A., i, 120.

**Triphenylmethylthiocarbamide** (v. MEYER and FISCHER), A., i, 120.

**3:4:5-Triphenylisooxazole** (HEIM), A., i, 718.

**Triphenyl-*o*-phenylenediamine** and its hydrochloride (WIELAND and LECHER), A., i, 569.

**$\alpha\beta\gamma$ -Triphenylpropane** (HEIM), A., i, 718.

**$\alpha\beta\beta$ -Triphenylpropionic acid**,  $\beta$ -hydroxy-, and its silver salt (PATERNO and CHIEFFI), A., i, 65.

**$\alpha\beta\gamma$ -Triphenylpropylene,  $\alpha$ -nitro-** (HEIM), A., i, 718.

**1:4:5-Triphenylpyrazole** (WISLICENUS and RUTHING), A., i, 304.

**Triphenylsemicarbazide** (*s*-diphenylcarbamylphenylhydrazide) and its derivatives (v. MEYER and NICOLAUS), A., i, 121.

**Triphenylsilicic acid**, sodium derivative of (SCHLENK, RENNING, and RACKY), A., i, 596.

**Triphenylstibine**, *tri-m*-amino-, and its hydrochloride (MORGAN and MICKLETHWAIT), T., 2292; P., 274.

**Triphenylstibinedihydroxidetrisulphonic acid and its salts** (MORGAN and MICKLETHWAIT), T., 2296.

**Triphenyltellurinium salts** (LEDERER), A., i, 857.

**Triphenyl-*p*-tolylethylene** (STAUDINGER and KON), A., i, 879.

**Triphenyltriazolone** (BUSCH and RUPPENTHAL), A., i, 87.

**Triphenyltribenzylmelamine** (v. MEYER and NÄBE), A., i, 122.

**Triphenyltrimethylmelamine** (v. MEYER and NÄBE), A., i, 122.

**Triple points** (JOUQUET), A., ii, 869.

**Tripropylthiocarbamide** (DELÉPINE), A., i, 23.

**Tripyridineferric thiocyanate** (BARRIERI and PAMPANINI), A., i, 225.

**Triquinolineferric thiocyanate** (BARRIERI and PAMPANINI), A., i, 225.

**Triresorcinoylboric acid** (COHN), A., i, 641.

**Trisalicylboric acid** (COHN), A., i, 640.

**Trisquinhydroneoxonium hydrosulphide** (RICHTER), A., i, 135.

**Tri-*o*- and *p*-tellurinium salts** (LEDERER), A., i, 857.

**Triticonucleic acid** (LEVENE and LA FORGE), A., i, 96.

**mm-p-Tritolylamine** (SCHOLL, SEER, and TRITSCH), A., i, 559.

**Tritolylcarbinol**, action of amines on (GREEN and WOODHEAD), A., i, 481.

**Tropilen**, constitution of (KÖTZ and ROSENBUSCH), A., i, 318.

**Trypanosome infection**, action of antimony on (MORGENROTH and ROSENTHAL), A., ii, 632.

effect of arsenophenylglycine on (BROWNING and MCKENZIE), A., ii, 59, 219.

influence of quinine and its derivatives on (MORGENROTH and HALBERSTAEDTER), A., ii, 219.

**Trypanosomes**, action of 3:5:9-triaminophenoazonium chloride on (LAVERAN and ROUDSKY), A., ii, 911.

**Trypsin**, isoelectric point of, and nucleoprotein (MICHAELIS and DAVIDSOHN), A., i, 343.

influence of hydrogen ion concentration on the action of (MICHAELIS and DAVIDSOHN), A., i, 1051.

action of, on oxidation in animal tissues (BATTELLI and STERN), A., ii, 808.

effect of calcium chloride and intestinal extract on the action of (HEKMA), A., i, 511.

**Tryptophan**, dissociation constants of (KANITZ), A., i, 97.

**Tryptophan**, preparation of the betaine of, and its identity with hypaphorine (VAN ROMBURGH and BARGER), T., 2068; P., 258.

**Tubes**, method of cutting, by etching (MILBAUER), A., ii, 715.

heated, gases from the walls of (GUICHARD), A., ii, 396.

**Tuberculin**, chemistry of (LOCKEMANN), A., ii, 916.

formation in protein-free culture media (LÖWENSTEIN and PICK), A., ii, 317.

**Tumour tissues**, accumulation of iodine in (TAKEMURA), A., ii, 633.

**Tungsten**, solubility of hydrogen in (SIEVERTS and BERGNER), A., ii, 990.

**Tungstic acid**, electrolytic reduction of (ROSENHEIM and BERNHARDI-GRISSON), A., ii, 402.

hydrosol, preparation of (MÜLLER), A., ii, 206.

complex derivatives of (MAZZUCHELLI and BORGHI), A., i, 11.

**Metatungstic acid** and its salts (ROSENHEIM and KOHN), A., ii, 116; (COPAUX), A., ii, 402; (ROSENHEIM), A., ii, 612.

**Tungsten**, estimation of (MDIVANI), A., ii, 230.

estimation of, in steel (HINRICHSEN and DIECKMANN), A., ii, 156.

estimation of, in wolframite in presence of molybdenite (TRAUTMANN), A., ii, 1139.

**Tungstic acid**. See under Tungsten.

**Turmeric oil** (RUPE and STEINBACH), A., i, 69, 293; (RUPE and BÜRGIN), A., i, 446; (SCHIMMEL & Co.), A., i, 476.

**Turnbull's blue**, composition of (MÜLLER, WEGELIN, TREADWELL, and DIEFENTHALER), A., i, 844.

**Turpentine**, detection of petroleum in (KLEIN), A., ii, 341.

**Turpentine oil**, Indian, constituents of (SCHIMMEL & Co.), A., i, 477.

hydrogenation of (VAVON), A., i, 389.

valuation of (KLASON), A., ii, 665.

detection of adulteration of, with pine-wood oil or resin spirit (GRIMALDI), A., ii, 231.

**Typewriting**, increase in metabolism due to the work of (CARPENTER), A., ii, 621.

**Typhaceæ**, formation of indole by (TELLE and HUBER), A., ii, 317.

**Tyrosine**, synthesis of (WHEELER and HOFFMAN), A., i, 499.

fermentation of (EHRLICH), A., i, 127.

**Tyrosine**, crystals of, in cheese (DOX), A., ii, 429.  
oxidation of (DENIS), A., i, 773.

**Tyrosine**, 3:5-dichloro-, and its hydrochloride (WHEELER, HOFFMAN, and JOHNSON), A., i, 923.

3:5-di-iodo- (*iodogorgonic acid*), (HENZE), A., i, 617; (OSWALD), A., i, 842.  
preparation of, from iodocasein (OSWALD), A., i, 1050.  
preparation of, from iodoprotein (OSWALD), A., i, 203, 372.  
effect of injection of (BERTHELOT), A., ii, 636.

**Tyrosinehydantoin** (WHEELER and HOFFMAN), A., i, 499.

**Tyrosinehydantoin**, 3:5-dichloro- (WHEELER, HOFFMAN, and JOHNSON), A., i, 923.

**Tyrosol** (*p-hydroxyphenylethanol*), and its dibenzoyl derivative (EHRLICH), A., i, 127.

**U.**

**Ultramicroscopy** (AMANN), A., ii, 85, 388; (THOMAE), A., ii, 866.  
of solutions (V. LEPKOWSKI), A., ii, 95.  
particles in, structure of (SVEDBERG and INOUYE), A., ii, 866.

**Ultrafiltration**, pulsating (BECHHOLD), A., ii, 385.

**$\Delta^{ax}$ -Undecadiene** (REFORMATSKY, GRISCHKEWITSCH-TROCHIMOWSKY, and SEMENOFF), A., i, 597.

**Unsaturated acids**. See under Acids.

**Unsaturated compounds**, refraction and dispersion of (AUWERS and EISENLOHR), A., ii, 781, 782  
addition of hydrogen cyanide to (COBB), A., i, 640.  
oxidation of, with organic peroxides (PRILESCHAEFF), A., i, 255, 604.  
reaction between zinc organic compounds and (KOHLER, HERITAGE, and MACLEOD), A., i, 862.  
reduction of (SKITA and PAAL), A., i, 449.

**Unsaturated groups**, contiguous, effect of, on optical activity (HILDITCH), T., 224; P., 6.

**Uracilcarboxylic acid**, and its salts (BEHREND and STRUVE), A., i, 158.

**Uranium**, association of lead with, in minerals (HOLMES), A., ii, 570.  
ratio of, to lead, in minerals, and its application to measurement of geological time (ZAMBONINI), A., ii, 959.

**Uranium** and radium, ratio between, in minerals (PIRRET and SODDY), A., ii, 454; (GLEDITSCH), A., ii, 845.  
measurement of the range of  $\alpha$ -particles of (FOCH), A., ii, 354.  
metallic (JORISSEN and TRIVELLI), A., ii, 207.

a new colloid of (SAMSONOW), A., ii, 207.

disintegration products of (ANTONOFF), A., ii, 844.

pharmacological action of (JACKSON and MANN), A., ii, 633.

carbide, formula for (LEBEAU), A., ii, 403.  
salts, effect of oxidising agents on the absorption spectra of (JONES and STRONG), A., ii, 168.  
action of, as luminous catalysts in the photolysis of acids (BERTHELOT and GAUDECHON), A., ii, 170.  
detection of (SIEMSEN), A., ii, 773.

**Uranium hexafluoride** (RUFF and HEINZELMANN), A., ii, 988.

**Uranic oxide**, hydrate of (OECHSNER DE CONINCK and RAYNAUD), A., ii, 806.

**Uranous oxide**, molecular weight of (OECHSNER DE CONINCK), A., ii, 403, 496.

**Uranyl nitrate** and its ethereal solution (LEBEAU), A., i, 257.  
hydrates of (LEBEAU), A., ii, 403.  
action of acetic anhydride on (VANINO), A., ii, 898.  
phosphates, behaviour of, with indicators (STARKENSTEIN), A., ii, 537.  
ethylamine, methylamine, and trimethylamine phosphates (BARTHE), A., i, 526.  
salts (VASILIEFF), A., ii, 1096.  
action of light on, and oxalic acid (BACON), A., ii, 5.  
duration of phosphorescence of (BECQUEREL), A., ii, 238.

**Uranium**, detection of (SIEMSEN), A., ii, 230.  
estimation of, volumetrically (IBBOTTSON and CLARKE), A., ii, 443.

**Uranium-X**, secondary emanations produced by (HUFF), A., ii, 569.

**Uranium earths**, estimation of radium in (MARCKWALD and RUSSELL), A., ii, 360.

**Uranous oxide**. See under Uranium.

**Uranyl salts**. See under Uranium.

**Urea**, formation of, from ammonium salts in the body (WAKEMAN and DAKIN), A., ii, 629.  
influence of, on the blood and milk of suckling women (ENGEL and MURSCHHAUSER), A., ii, 815.

**Urea**, benzenesulphonate of (SEYEWETZ and POIZAT), A., i, 360.  
 estimation of (BENEDICT), A., ii, 79 ; (TAYLOR), A., ii, 344.  
 estimation of, in wine (HENRIQUES and GAMMELTOFT), A., ii, 670.  
 See also Carbamide.

**Ureides**, action of cotarnine on (KNOLL & Co.), A., i, 670.

**Urethanoanisylacetyleacetone** (BIANCHI and SCHIFF), A., i, 978.

**Urethanobenzylacetoeacetic acid**, ethyl ester (BIANCHI and SCHIFF), A., i, 977.

**Urethanobenzylacetyleacetone** (BIANCHI and SCHIFF), A., i, 977.

**Urethanobenzylbenzoylactic acid**, ethyl ester (BIANCHI and SCHIFF), A., i, 977.

**Urethanocinnamylacetoeacetic acid**, ethyl ester (BIANCHI and SCHIFF), A., i, 978.

**Urethanocinnamylacetyleacetone** (BIANCHI and SCHIFF), A., i, 978.

**p-Urethanophenylsarinic acid** and nitro- (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), A., i, 760.

**Urethanosalicylacetyleacetone** (BIANCHI and SCHIFF), A., i, 978.

**Uric acid** formation (IZAR), A., ii, 907.  
 formation of, from cholesterol, in the liver (TRAETTA-MOSCA and APOLLONI ; TRAETTA-MOSCA and MIZENMACHER), A., ii, 52.  
 formation of xanthine from (SUNDWIK), A., i, 584.  
 decomposition of, by sodium hydroxide (MAY), A., ii, 1131.  
 decomposition of, by organic alkaline solvents (STEVENS and MAY), A., i, 403.  
 influence of water-drinking on the excretion of (RULON and HAWK), A., ii, 135.  
 excretion of, in gout and rheumatoid arthritis (MALLORY), A., ii, 219.  
 metabolism. See Metabolism.  
 origin of, in man (SMETÁNKA), A., ii, 218.  
 complex salts of (KOHLER), A., i, 243.  
 estimation of, in blood serum (ROETH-LISBERGER), A., ii, 548.  
 rapid estimation of, in urine (PIZZORNO), A., ii, 667.  
 estimation of, iodometrically in urine (VITALI), A., ii, 776.

*iso***Uric acid**, derivatives of (BILTZ), A., i, 168.

**Uridine** (LEVENE and JACOBS), A., i, 96.

**Urine** of carcinoma and of health, differences in (KOJO), A., ii, 909.  
 acidity of (v. SKRAMLIK), A., ii, 511.

**Urine**, excretion of ammonia in (GAMMELTOFT), A., ii, 1115.  
 action of antiseptics of (JORDAN), A., ii, 218.  
 excretion of arsenic in, after the use of dihydroxydiaminoarsenobenzene (GREVEN), A., ii, 511.  
 pressor bases of (BAIN), A., ii, 631.  
 reduction of blood pressure by (POPIELSKI), A., ii, 511.  
 colloids in (LICHTWITZ), A., ii, 632.  
 of women, creatine in (KRAUSE), A., ii, 1116.  
 of infants, importance of the glycuronic acid reaction in the (MAYERHOFER), A., ii, 311.  
 nitrogen constituents of, after feeding on protein (v. SOMOGYI), A., ii, 416.  
 pigments of (WEISZ), A., ii, 136.  
 urorosein pigments of (ARNOLD), A., ii, 309.  
 a yellow substance in (DE JAGER), A., ii, 58.  
 Bence-Jones protein in (HOPKINS and SAVORY), A., ii, 417.  
 trimethylamine in (DORÉE and GOLLA), A., ii, 212.  
 of the fox, dog and coyote, analyses of the (HAWK), A., ii, 308.  
 excretion of, after muscular exercise (HIGGINS and BENEDICT), A., ii, 909.

**Urine**, analytical methods relating to :—  
 detection of ammonium sulphide in (GAZZETTI and SARTI), A., ii, 150.  
 detection of bile-pigment in (v. MASLOFF), A., ii, 1144.  
 detection of blood in (WEITBRECHT), A., ii, 447.  
 detection of haemoglobin in (McDERMOTT), A., ii, 674.  
 detection of mercury in (SALKOWSKI), A., ii, 771, 934.  
 gravimetric estimation of albumin in (SIMONOT), A., ii, 945.  
 estimation of alkylamines in (ERDMANN), A., ii, 551.  
 estimation of ammonia in (STEEL), A., ii, 68 ; (FOLIN), A., ii, 331 ; (TAYLOR), A., ii, 415.  
 estimation of arsenic in (HEIDUSCHKA and BIÉCHY), A., ii, 537.  
 estimation of calcium in (McCRUDEN), A., ii, 1136.  
 pathological, estimation of creatine in (WALPOLE), A., ii, 671.  
 colorimetric estimation of dextrose in (AUTENRIETH and TESDORPF), A., ii, 159.  
 pathological, estimation of fat in (KAKIUCHI), A., ii, 549.

**Urine, analytical methods relating to:—**  
 estimation of hexamethylenetetramine in (SCHRÖTER), A., ii, 343.  
 estimation of indican in (KOZLOWSKI), A., ii, 553.  
 estimation of iron in (REICH), A., ii, 1013.  
 colorimetric estimation of mercury in (HEINZELMANN), A., ii, 772.  
 estimation of phenol and *p*-cresol in (SIEGFRIED and ZIMMERMANN), A., ii, 72, 941.  
 herbivorous, estimation of phenols in (LIECHTII and MOOSER), A., ii, 942.  
 estimation of phosphates in (AMANN), A., ii, 536.  
 estimation of potassium in (GREEN), A., ii, 1135.  
 estimation of sugar in (GAEBEL), A., ii, 78; (FERNAU: BANG), A., ii, 664.  
 estimation of sulphur in (DENIS), A., ii, 66; (SCHMIDT), A., ii, 67; (BENEDICT), A., ii, 330; (SALKOWSKI), A., ii, 626.  
 estimation of trimethylamine in (CAC-  
CIA), A., ii, 550.  
 quantitative estimation of trimethyl-  
amine in (KINOSHITA), A., ii, 343.  
 estimation of urea in (HENRIQUES and  
GAMMELTOFT), A., ii, 670.  
 estimation of uric acid in (PIZZORNO), A., ii, 667; (VITALI), A., ii, 776.

**Urobilin**, separation of, from its chromo-  
gen (GRIMBERT), A., i, 395.  
 excretion of, and its relation to haemoglo-  
bin (SIMPSON), A., ii, 309.

separation and detection of (CARREZ), A., ii, 944.

**Urochrome**, estimation of (MEISZ), A., ii, 136.

**Urochromogen**, estimation of (WEISZ), A., ii, 136.

**Urohypotensine**, influence of oxidation  
on the toxicity of (ABELOUS and BAR-  
DIER), A., ii, 816.

**Urorosein** pigments of urine (ARNOLD), A., ii, 309.

“Urucuri” fruit, constituents of (FRANK and GNÄDINGER), A., ii, 647.

V.

**Valency**, the electron conception of (FALK and NELSON), A., ii, 104; (FALK), A., ii, 711.  
 relation of, to ionisation of gases (MILLIKAN and FLETCHER), A., ii, 573.

**isoValeramide-chloral**, bromo- (CHEMISCHE FABRIK GEDEON RICHTER), A., i, 836.

***n*-Valeric acid**, *d*-methylhexylcarbinyl ester of (HILDITCH), T., 222.

**Valeric acid**, *d*- and *l*- $\gamma$ -amino-, and *d*- and *l*- $\gamma$ -benzoylamino- (FISCHER and GROH), A., i, 773.

**$\beta\gamma\delta$ -tribromo-**, and its ethyl ester (LESPIEAU), A., i, 106.

**isoValeric acid**, benzyl ester (SABATIER and MAILHE), A., i, 258.

**isoValeric acid**,  $\alpha$ -bromo-, and  $\alpha$ -iodo-, guaiacol esters of, and tolyl ester of the latter, and *di*- $\alpha$ -bromo-, and *di*- $\alpha$ -iodo-, quinol esters of (FARBENFABRIK-  
EN VORM. F. BAYER & Co.), A., i, 630.

**tert.-Valerylacetic acid** (WAHLBERG), A., i, 707.

**tert.-Valerylacetamide** (WIDMAN and WAHLBERG), A., i, 702.

**tert.-Valeryacetimino-ether** hydro-  
chloride and platinichloride (WIDMAN and WAHLBERG), A., i, 702.

**tert.-Valerylacetonitrile**. See Pinacolin,  $\omega$ -cyano.

**isoValerylaminooaceto-*p*-phenetidine**,  $\alpha$ -bromo- (CHEMISCHE WERKE VORM. DR. HEINRICH BYK), A., i, 323.

**isoValeryl-*p*-aminoacetophenone**,  $\alpha$ -bromo- (REMFRY), T., 625; P., 72.

**isoValeryl- $\alpha$ -amino-*n*-nonoylvaline**,  $\alpha$ -bromo- (HOPWOOD and WEIZMANN), T., 1581.

**5-Valerylidene-9-phenylrhodanic acid** (BUTSCHER), A., i, 333.

**tert.-Valerylmethylacetic acid**, and its ethyl ester (WAHLBERG), A., i, 707.

**Valve cells**. See under Electro-  
chemistry.

**Vanadic acid**. See under Vanadium.

**Vanadium**, atomic weight of (MCADAM), A., ii, 117.

**Vanadyl bromide** (RUFF and LICK-  
FETT), A., ii, 988.

**Vanadium chlorides** (RUFF and LICK-  
FETT), A., ii, 291.

**tri-, tetra-, and penta-fluorides** (RUFF and LICKFETT), A., ii, 989.

**Vanadyl di- and tri-fluorides** (RUFF and LICKFETT), A., ii, 989.

**Vanadium pentoxide**, action of calcium fluoride on (PRANDTL and MANZ), A., ii, 990.

**Vanadic acid**, colloidal, preparation of (MÜLLER), A., ii, 732.  
 estimation of, in the presence of phosphoric acid (EDGAR), A., ii, 71.

**Vanadium**, estimation of, in the presence of arsenic (TRAUTMANN), A., ii, 544.  
 estimation of silicon in, and in its iron alloys (TRAUTMANN), A., ii, 538.  
 and iron, estimation of, volumetrically (MÜLLER and DIEFENTHALER), A., ii, 824.

**Vanadium**, separation of iron and (DEISS and LEYSAHT), A., ii, 939.

**Vanadyl salts**. See under Vanadium.

**Vanilla**, action of ultra-violet light on the green husks of (POUGNET), A., ii, 528.

**4-Vanillin** methyl carbonate (PAULY, SCHÜBEL, and LOCKEMANN), A., i, 788.

**3-isoVanillin** methyl carbonate (PAULY, SCHÜBEL, and LOCKEMANN), A., i, 788.

**Vanillin-p-methoxyphenylhydrazone** (PADOA and SANTI), A., i, 1030.

**3-Vanillylideneamino-2-methyl-4-quinazolone** (BOGERT, BELL, and AMEND), A., i, 163.

**Vapour density**, determination of, of volatile substances (MENZIES), A., ii, 94.

influence of catalysts in determination of (KLING), A., ii, 371.

**Vapour lines**, retrogressive (SMITS), A., ii, 855.

**Vapour pressure**, studies in (SMITH and MENZIES), A., ii, 114.

optical measurement of (CUTHBERTSON and CUTHBERTSON), A., ii, 582.

calculation of, in univariant systems (URBAIN and SCAL), A., ii, 370.

alterations in, as a means of showing the existence of compounds (KRULLA), A., ii, 480.

variation of, with temperature (CEDERBERG), A., ii, 966.

heat of vaporisation and temperature, relation between (CEDERBERG), A., ii, 854.

of hydrates, determination of (PARRYINGTON), P., 12.

of liquids, causes of the constant temperature variation in (MICHAUD), A., ii, 371.

in binary systems of partially miscible liquids (KOHNSTAMM and TIMMERMANS), A., ii, 370.

**Vapours**, condensation of (BECKER), A., ii, 1063.

**Variscite**, crystallised, from Utah (SCHALLER), A., ii, 1103.

**Vaso-motor centre**, effects of asphyxia on the (MATHISON), A., ii, 617.

**Vegetarians**, action of animal proteins on (ALBERTONI and ROSSI), A., ii, 411.

**Vegetation**, effect of road tarring on (MIRANDE), A., ii, 64.

**Velocity of racemisation**. See under Affinity, chemical.

**Velocity of reaction**. See under Affinity, chemical.

**o-Veratraldehyde**, derivatives of (PERKIN, ROBERTS, and ROBINSON), P., 57.

**Veratraldehyde**, 6-nitro-, condensation of, with acetone and alkali (PISOVSCHI), A., i, 577.

**o-Veratric acid** (PERKIN, ROBERTS, and ROBINSON), P., 57.

**Veratrine**, action of, on striated muscle (LAMM), A., ii, 813.

effect of, on muscle and nerve (WALLER), A., ii, 138.

**Veratrole**, 3:4:5-trinitro-, preparation of (KLEMENC), A., i, 779.

**α-Veratryl-δδ-dimethylfulgenic acid** (STOBBE and LENZNER), A., i, 374.

**α-Veratryl-δδ-dimethylfulgide** (STOBBE and LENZNER), A., i, 374.

**γ-Veratrylitaconic acid**, and its barium salt and anhydride (STOBBE and LEUNER), A., i, 378.

**Veratrylnorhydrohydrastinine** (PICTET and GAMS), A., i, 807.

**Verbascum thapsus**, phytosterol and its derivatives from (KLOBB and EHRWEIN), A., i, 972.

**Verbasterol** and its acetyl derivatives (KLOBB and EHRWEIN), A., i, 972.

**Vernine**, identity of, with guanosine (SCHULZE and TRIER), A., i, 155.

**Veronal**, toxicity of (GRÖBER), A., ii, 316.

pharmacology of (ROEMER: JACOBJ and ROEMER: JACOBJ), A., ii, 1120.

detection of (JORISSEN), A., ii, 670.

forensic detection of (HEIDUSCHKA), A., ii, 816.

**Viburnum lentago**, fruit of (GILLETTE), A., ii, 529.

**Vicianin**, constitution of (BERTRAND and WEISWEILLER), A., i, 15.

**Vicianose**, constitution of (BERTRAND and WEISWEILLER), A., i, 15.

**Vicine**, constitution of (SCHULZE and TRIER), A., i, 155.

**1-Vinyl-Δ<sup>1</sup>-cyclo-hexene** (EGOROVA), A., i, 959.

**5-Vinylideneamino-o-4-xylenol** (DIEPOLDER), A., i, 853.

**1-Vinyl-β-naphthol**, ω-nitro- (REMFRY), T., 286; P., 21.

**Vinyltrimethylammonium perchlorate bromo-** (HOFMANN and HÖBOLD), A., i, 608.

**Viscose** from cellulose and from starch (Ost, WESTHOFF, and GESSNER), A., i, 710.

**Viscosity**, measurement of (SCARPA), A., ii, 17.

apparatus for determination of (v. LIEBERMANN), A., ii, 585.

and atomic weight of the inert gases, relation between (RANKINE), A., ii, 87.

**Viscosity**, correlation of, with other physical properties (HILDITCH and DUNSTAN), P., 93.  
 in relation to the measurement of the rate of reaction (DUNSTAN and MUSSELL), T., 565 ; P., 59.  
 and conductivity in mixed solvents containing glycerol (GREIG and JONES), A., ii, 863.  
 influence of, on the activity of diastatic enzymes (ACHALME and BRESSON), A., i, 591 ; (ACHALME), A., i, 592.  
 and velocity of hydrolysis, relation between (GRUMELL), A., ii, 197.  
 of binary mixtures (DRUCKER and KASSEL), A., ii, 373.  
 of binary liquid mixtures (DRAPIER), A., ii, 968.  
 of colloidal solutions (WOUDSTRA), A., ii, 190 ; (HERZOG), A., ii, 373.  
 of dispersoids (HATSCHEK), A., ii, 19.  
 of gases of the argon group (REINGANUM), A., ii, 858.  
 of gases, liquids, and solids (BINGHAM), A., ii, 372.  
 of liquids in relation to van der Waals' theory (SMOLUCHOWSKI), A., ii, 258.  
 of liquids used for the mechanical separation of minerals (CLERICI), A., ii, 257.  
 of mixed liquids, relation between fluidity and (BINGHAM and WHITE), A., ii, 858.  
 of organic liquids (SORKAU), A., ii, 793.  
 turbulence, of liquids (BOSE and BOSE), A., ii, 257 ; (V. KÁRMÁN), A., ii, 469.  
 of suspensions (BANCELIN), A., ii, 1067.

**Viticulture**, use of lead arsenate in (MOREAU and VINET), A., ii, 326, 529.  
*Vitis*, tannin substances in the roots of (PETRI), A., ii, 325.

**Voltaic couple**. See under Electrochemistry.

**Voltmeter**. See under Electrochemistry.

**Volumes**, molecular, at the melting-point, influence of the alternating factor in series on (LE BAS), P., 196.

## W.

**van der Waals' equation**, critical quantities of (VAN DER WAALS), A., ii, 583, 584.  
 theory in relation to viscosity of liquids (SMOLUCHOWSKI), A., ii, 258.

**Walden inversion** (MCKENZIE and BARROW), T., 1910 ; P., 232 ; (FISCHER), A., i, 418 ; (FISCHER and SCHEIBLER), A., i, 527 ; (SCHEIBLER and WHEELER), A., i, 835.  
**Wallflower**. See *Cheiranthus cheiri*.  
**Warrenite**, composition of (SCHALLER), A., ii, 209.  
**Wash-bottle** for continuous hot water supply (BOLTZ), A., ii, 433.  
 with a divided liquid layer (MICHEL), A., ii, 35.  
 closing contrivance for (MICHEL), A., ii, 199.  
 safety (HAPPE), A., ii, 715.  
 self-acting (HAIN), A., ii, 715.  
**Washing soda**. See Sodium carbonate.  
**Wassermann reaction** in rabbits (BROWNING and MCKENZIE), A., ii, 59, 219.  
 action of lecithin in the (BROWNING, CRUICKSHANK, and GILMOUR), A., ii, 312.  
**Water**, constitution of (ROSENSTIEHL), A., ii, 270 ; (DUCLAUX), A., ii, 595.  
 aggregation and crystallisation of (SKWORZOFF), A., ii, 970.  
 polymerisation of (ROSENSTIEHL), A., ii, 386.  
 molecular association in (PEDDLE and TURNER), T., 685 ; P., 8.  
 rôle of, in the constitution of solid hydrates (FEYTIS), A., ii, 1058.  
 apparatus for electrolysis of (WOYTAČEK), A., ii, 877.  
 decomposition of, by ultra-violet light (TIAN), A., ii, 452, 564.  
 refractive index of (BAXTER, BURGESS and DAUDT), A., ii, 557.  
 refraction and dispersion by (MERCZING), A., ii, 574.  
 specific heat of (BOUSFIELD and BOUSFIELD), A., ii, 580 ; (COTTY), A., ii, 964.  
 determination of the heat of evaporation of (RICHARDS and MATTHEWS), A., ii, 697.  
 isopiestic expansion of, at high temperatures and pressures (WATSON), A., ii, 793.  
 boiling point of (BERKELEY and APPLEBEY), A., ii, 1061.  
 vapour, influence of, on measurements in a McLeod pressure gauge (GUILCHARD), A., ii, 582.  
 influence of, on the boiling point of ethyl alcohol, at various pressures (WADE and MERRIMAN), T., 997 ; P., 65.  
 partial pressures of, in mixtures of, and alcohols (DOROSCHEWSKY), A., ii, 1062.

**Water** and hydrogen sulphide, equilibrium between (SCHEFFER), A., ii, 264.  
 and hydrogen sulphide, the system (SCHEFFER), A., ii, 870.  
 and phenol, the system (SMITS and MAARSE), A., ii, 870.  
 solubility of, in benzene, petroleum and paraffin oil (GROSCHUFF), A., ii, 595.  
 and alcohol, boiling points of mixture of (MARILLER), A., i, 513.  
 influence of the acidity of aqueous solutions on the system oil and (REINDERS), A., ii, 373.  
 possible solid solution of, in crystals (RICHARDS), A., ii, 589.  
 sterilisation of (WOODHEAD), A., ii, 63.  
 decomposition of, by bacteria (SPÄT), A., ii, 1121.  
 decomposition of, by metals (KERNBAUM), A., ii, 716.  
 of Lake Tinaksk, Astrakhan, composition of (SOKOLOFF), A., ii, 502.  
**Water of crystallisation** (LECOQ DE BOISBAUDRAN); A., ii, 270; (ROSENSTIEHL), A., ii, 270, 386.  
 in hydrated salts (BAKER and ADLAM), T., 507; P., 17.  
**Chalk waters**, sand-filtration and precipitation of (NANKIVELL), A., ii, 977.  
**Moor water**, acid content of (STREMMÉ), A., ii, 70.  
**Potable and drinking water**, estimation of chlorine in (STUART), A., ii, 926.  
**Rain-water**, composition of, from British Guiana (HARRISON), A., ii, 530.  
 analysis of, from Lincoln, New Zealand (GRAY), A., ii, 327.  
 from Groningen, estimation of nitrogen in (HUDIG and WELT), A., ii, 1128.  
 in Tonquin, nitrogen content of (AUFRAY), A., ii, 224.  
 estimation of chlorine and sulphuric acid in (WITUYNJ), A., ii, 432.  
**Sea-water**, solubility of oxygen in (WHIPPLE and WHIPPLE), A., ii, 271.  
 the de-salting of (V. LIPPMANN and ERDMANN), A., ii, 723.  
 chemical action of, on Portland cement (POIRSON), A., ii, 204.  
 action of, on iron (FRIEND and BROWN), T., 1302; P., 156.  
 analysis of (RUPPIN), A., ii, 123.  
**Spring and mineral waters**, occurrence of pentathionic acid in (MACLAURIN), P., 10.

**Water:—**

**Spring and mineral waters**, thermal, rare gases in (MOUREU), A., ii, 808.  
 of Brambach (FRESENIUS and CZAPSKI: WEIDIG), A., ii, 686.  
 of the Caledonia springs, Ottawa, radioactivity of (EVE), A., ii, 846.  
 of Columbières-sur-Orb, amount of radium emanation in (DANNE and CRÉMIER), A., ii, 1049.  
 from Dürkheim, radioactivity of (EBLER and FELLNER), A., ii, 1049.  
 of Iceland, radioactivity of (THORKELSSON), A., ii, 9.  
 of the island of Ischia, radioactivity of (SCARPA), A., ii, 8.  
 Russian, radioactivity of (MEZERNITZKY), A., ii, 960.  
 thermal, from St. Saturnino, radioactivity of (BERNINI), A., ii, 846.  
 from Silesia, analyses of (WOY), A., ii, 617.  
 of Teplitz-Schönauer, radioactivity of (ŠTĚRBA), A., ii, 360.  
 of the Tyrol, radioactivity of (BAMBERGER and KRÜSE), A., ii, 1049.  
 from Uriage (Isère), gases in (MASON), A., ii, 123.  
 of the Yellowstone Park, radioactivity of (MOORE and SCHLUNDT), A., ii, 360.  
**Water analysis:—**  
 thermal, analysis of by some new methods (GAUTIER and MOUREU), A., ii, 300.  
 detection of nitrates and nitrites in (DENIGÈS), A., ii, 655.  
 detection and estimation of nitrates and nitrites in (TILLMANS and SUTTHOFF), A., ii, 767.  
 estimation of arsenic and of iron salts in (AGENO and GUICCIARDINI), A., ii, 769.  
 hard, estimation of calcium and magnesium in (NOTHNAGEL), A., ii, 1031.  
 estimation of free carbon dioxide in (TILLMANS and HEUBLEIN), A., ii, 70.  
 estimation of the hardness of (SILBER), A., ii, 228.  
 estimation of iron, ammonia and nitrous acid in (SÜPFLE), A., ii, 940.  
 estimation of traces of, by magnesium methyl iodide (ZEREWITINOFF), A., ii, 1026.

**Water analysis** :—

estimation of nitrates in (CHAMOT, PRATT, and REDFIELD), A., ii, 331.  
 estimation of nitrites in (KASTLE and ELVOVE), A., ii, 437 ; (BLANC), A., ii, 930.  
 estimation of organic matter in (NOLL), A., ii, 925.  
 from sulphur springs, estimation of organic matter in (DITTRICH), A., ii, 1035.

**Water-bath**, a constant level (MINIOT), A., ii, 714.

**Water-drinking**, studies on (RULON and HAWK : WREATH and HAWK), A., ii, 1012.

influence of, on elimination of uric acid (RULON and HAWK), A., ii, 135.

**Wax**, bees, alcohol from (SUNDWIK), A., i, 599.

Candelilla, constituents of (SANDERS), P., 250.

Japanese, alcoholysis of (TASSILLY), A., i, 602.

**Waxes** of the *Coniferæ* (BOUGAULT), A., ii, 223.

estimation of the acid and saponification numbers of (WICHMANN), A., ii, 550.

**Weight** of a falling drop and the laws of Tate (MORGAN), A., ii, 372, 584 ; (MORGAN and THOMSEN), A., ii, 584 ; (MORGAN and DAGHLIAN), A., ii, 585 ; (MORGAN and SCHWARTZ), A., ii, 698 ; (MORGAN and CANN), A., ii, 699 ; (MORGAN and MCAFEE), A., ii, 857 ; (MORGAN and OWEN), A., ii, 1067.

**Weights**, molecular, determination of, by lowering of vapour pressure (MENZIES), A., ii, 94.

and viscosity of liquids and solids (BINGHAM), A., ii, 372.

**Whalebone**, monoamino-acids of (ABDERHALDEN and LANDAU), A., ii, 509.

**Wheat**, influence of soil on the root development of (POLL), A., ii, 224.

effect of chemical reagents on the growth of seedlings of (REED), A., ii, 1127.

influence of fermented sugar solutions on the respiration of seedlings of (IWANOFF), A., ii, 48.

effect of volatile substances on germinating (COUPIN), A., ii, 65.

utilisation of the proteins of (MENDEL and FINE), A., ii, 1109.

**White metal**, analysis of (SCHÜRMANN), A., ii, 158.

**Wines**, action of nitrogen on (MALVEZIN), A., ii, 916.

**Wines**, new treatment of (MALVEZIN), A., ii, 648.

alkalinity of the ash of (BARAGIOLA and HUBER), A., ii, 662.

manganese in (PRANDI and CIVETTA), A., ii, 648.

oxalic acid in (MONNIER), A., ii, 648.

bitter, ferment producing acraldehyde in (VOISENET), A., ii, 915, 1127.

detection of sucrose in (SCHAFFER and PHILIPPE : ROTHENFUSSER), A., ii, 665.

analysis of (V. DER HEIDE and BARAGIOLA), A., ii, 529.

physico-chemical analysis of (PHILIPPE and DUPERTHUIS), A., ii, 662.

estimation of the acidity of (MALVEZIN), A., ii, 342.

estimation of volatile acids in (WINDISCH and ROETTGEN), A., ii, 942 ; (VERDA), A., ii, 1037.

estimation of alcohol in (DUPERTHUIS and PHILIPPE), A., ii, 662.

physico-chemical estimation of calcium in (DUBOUX), A., ii, 228.

estimation of glycerol in (RINATI), A., ii, 545.

estimation of nitric acid in (TILLMANS), A., ii, 930.

estimation of phosphorus in (DORMANE), A., ii, 931.

white, estimation of sulphur dioxide in (RICHTER), A., ii, 330.

estimation of tannin in (MALVEZIN), A., ii, 779.

estimation of tartaric acid in (CARLES), A., ii, 342 ; (KLING), A., ii, 666.

**Withania somnifera**, constituents of (POWER and SALWAY), T., 490 ; P., 53.

**Withanic acid** and its methyl ester (POWER and SALWAY), T., 505 ; P., 53.

**Withanol** and its acetyl derivative (POWER and SALWAY), T., 497 ; P., 53.

**Witherite**, specific heat of (LASCHTSCHENKO), A., ii, 253.

**Wittchenite** (PRIWOZNIK), A., ii, 991.

**Wolfram concentrate**, assay of (HUTCHIN), A., ii, 940.

**Wolframite**, estimation of tungsten in, in presence of molybdenite (TRAUTMANN), A., ii, 1139.

**Women**, creatine in the urine of (KRAUSE), A., ii, 1116.

suckling, influence of urea on the blood and milk of (ENGEL and MURSCHHAUSER), A., ii, 815.

**Wood**, Philippine, constituents of (Cox), A., ii, 762.

(*o*-*Xylene*, *Me* : *Me* = 1:2; *m*-*xylene*, *Me* : *Me* = 1:3; *p*-*xylene*, *Me* : *Me* = 1:4.)

**Wool**, sheep's, adsorption of acids by (V. GEORGIEVICS and POLLAK), A., ii, 1070.

**Worms**, parasitic, peptolytic enzymes in (ABDERHALDEN), A., ii, 1009.

**"Wormwood" oil**, constituents of (SCHIMMEL & Co.), A., i, 894.

## X.

**X-rays**. See Röntgen rays under Photochemistry.

**Xanthaline**, derivatives of, and its identity with papaveraldine (DOBSON and PERKIN), T., 135; P., 4.

**Xanthic acid**, metallic salts, pyrogenic decomposition of (HÉBERT), A., i, 348.

reactions of (FERRER HERNANDEZ and CAMPO Y CERDAN), A., ii, 825.

**Xanthine**, formation of, from uric acid (SUNDWIK), A., i, 584.

**Xanthone**, condensation of *p*-dibromo-benzene with (CONE and WEST), A., i, 805.

**Xanthonedicarboxylic acid** (LIEBERMANN and ZSUFFA), A., i, 388.

**Xanthotoxin**, and its derivatives (PRIESS), A., ii, 646.

**Xanthoxylene** and its hydrochloride (SEMMLER and SCHÖSSBERGER), A., i, 1002.

**Xanthoxylum alatum** and *aubertia*, constituents of the essential oil of (SEMMLER and SCHÖSSBERGER), A., i, 1002.

**Xenon**, spectrophotometric estimation of (MOUREU and LEPAPE), A., ii, 1134.

***o*-Xylene**, derivatives of (CROSSLEY and WREN), T., 2341; P., 307; (CROSSLEY and MORRELL), T., 2345; P., 307; (DIEPOLDER), A., i, 853.

***o*-Xylene,  $\omega\omega'$ -*di*-iodo-** (KNOLL & Co.), A., i, 432.

3-nitro-, and 3:6-dinitro- (CROSSLEY and WREN), T., 2342; P., 307.

4:6-dinitro- (CROSSLEY and MORRELL), T., 2349.

***m*-Xylene, 4:5-dihydroxy-** (DIEPOLDER), A., i, 853.

$\omega\omega'$ -*di*-iodo-, and *tetra*iodo- (KNOLL & Co.), A., i, 432.

***p*-Xylene, interaction of, with ethyl di-azoacetate (BUCHNER and SCHULZE), A., i, 50.**

$\omega\omega'$ -*di*-iodo- (KNOLL & Co.), A., i, 432.

**4-m-Xyleneazo-5-hydroxy-3-methyl-iso oxazole** (BÜLOW and HECKING), A., i, 245.

**4-m-Xyleneazo-5-hydroxy-3-methyl-pyrazole** (BÜLOW and HECKING), A., i, 405.

**4-m-Xyleneazo-5-hydroxy-1-phenyl-3-methylpyrazole** (BÜLOW and HECKING), A., i, 405.

**4-m-Xyleneazo-3-phenyliso oxazolone** (MEYER), A., i, 341.

***m*-Xylenol**, 5-chloro-, preparation of (ORTON and KING), T., 1191.

***p*-2-Xylenol**, 3:6-dibromo-4-amino-, and 3:6-dibromo-5-nitro-, and its acetyl derivative (ZINCKE and BREITWEISER), A., i, 216.

***m*-Xyli dine**, 5-chloro- (ORTON and KING), T., 1188.

***o*-4-Xylenyl acetates**, 5-amino-, acetyl derivatives (DIEPOLDER), A., i, 853.

**o-3-Xyli dine**, 4:5-, 4:6-, and 5:6-dinitro-, and their acetyl derivatives (CROSSLEY and MORRELL), T., 2349; P., 307.

**o-4-Xyli dine**, 3:4(5:6)-, and 3:5-dinitro- and their acetyl derivatives (CROSSLEY and MORRELL), T., 2350; P., 307.

***m*-4-Xyli dylcamphoformeneaminecarboxylic acid** and its *m*-4-xyli dine salt (TINGLE and BATES), A., i, 55.

***p*-Xyloquinol**, *dibromo*, *diacetate* of (ZINCKE and BREITWEISER), A., i, 216.

**Xyloquinone**,  $\beta$ -lactone of (STAUDINGER and BEREZA), A., i, 461.

***p*-Xyloquinone**, action of magnesium methyl iodide on (BAMBERGER and BLANGEY), A., i, 883.

**2-Xyloylbenzoic acid**, 5'-amino-, and 5'-chloro- (BADISCHE ANILIN- & SODA-FABRIK), A., i, 885.

**3-(*m*-4)-Xyloylpicolinic acid** (HALLA), A., i, 1021.

***o*- and *p*-Xylyl iodide** (PAWLOWSKY), A., i, 442.

**disulphide** (STRZELECKA), A., i, 196.

***p*-Xylyl sulphide** (MARTYNOWICZ), A., i, 196.

***o*-4-, *m*-4-, and *p*-5-Xylyl ammonium osmichloride** (GUTBIER and WALBINGER), A., i, 191.

**platinibromide** (GUTBIER, BAURIEDEL, and OBERMAIER), A., i, 33.

***o*-*o*-, *m*-, and *p*-Xylyl- $\alpha\alpha$ -dimethylacetophenone** (HALLER and BAUER), A., i, 726.

***o*- and *m*-Xylyl dimethyl ethylamine** (HALLER and BAUER), A., i, 726.

***o*-, *m*-, and *p*-Xylyl dimethyl ethylcarbinol** (HALLER and BAUER), A., i, 726.

***o*-Xylyleneconhydrinium salts** (SCHOLTZ), A., i, 327.

***o*-Xylylenestilbazolinium salts** (SCHOLTZ), A., i, 327.

(*o-Xylene, Me : Me* = 1:2; *m-xylene, Me : Me* = 1:3; *p-xylene, Me : Me* = 1:4.)

**o-Xylylene-*m*- and *p*-xylylenedipiperidinium salts** (SCHOLTZ), A., i, 327.

**m-Xylylene-*p*-xylylenedipiperidinium salts** (SCHOLTZ), A., i, 326.

***o*- and *p*-Xylyl ethers** (PAWLOWSKY), A., i, 442.

**2-*m*-4-Xylyl-3-ethylisoindolinone**, 3-hydroxy- (KUHARA and KOMATSU), A., i, 207.

***o*- and *m*-4, and *p*-2-Xylylmethylallylcarbinol** (MATSCHUREVITSCH), A., i, 961.

**2-*m*-4-Xylyl-3-methylisoindolinone**, 3-hydroxy- (KUHARA and KOMATSU), A., i, 207.

***o*-3-, *m*-4, and *p*-Xylylphtalamide** (KUHARA and KOMATSU), A., i, 207.

***as*-, and *s-o*-3, *m*-4, and *p*-Xylylphtalamide** (KUHARA and KOMATSU), A., i, 207.

**3-(*m*:4)-Xylyl pyridyl ketone** and its picrate (HALLA), A., i, 1021.

***p*-Xylylsulphone** (MARTYNOWICZ), A., i, 196.

***p*-Xylylsulphoxide** (MARTYNOWICZ), A., i, 196.

**Y.**

**Yeast**, influence of acids and alkalis on the autolysis of (NAVASSART), A., ii, 141.

influence of antisepsics on the autolysis of (NAVASSART), A., ii, 640.

influence of salts on the autofermentation of (HARDEN and PAIN) P., 103.

extraction of zymase from (v. BEDEFF), A., i, 248; ii, 519; (RINCKLEBEN), A., i, 1054; (KAYSER), A., ii, 421, 640.

activity of the enzymes of (v. EULER and KULLBERG), A., ii, 817.

amount of glycogen in (HENNEBERG), A., ii, 519.

fermentation with (v. EULER and LUNDEQVIST), A., ii, 640.

fermentation, sugar-free (NEUBERG and HILDESHEIMER), A., ii, 320; (NEUBERG and TIR), A., ii, 520; NEUBERG and KARZAG), A., ii, 1019, 1020.

influence of arsenic compounds on the fermentation of sugars by (HARDEN and YOUNG), A., ii, 519.

degradation of amino-acids in fermentation by (NEUBAUER and FROMHERZ), A., i, 201.

reduction of furfuraldehyde by (LINTNER and v. LIEBIG), A., ii, 816.

**Yeast**, degradation of nitrogenous substances by (SCHWARZ), A., ii, 640.

formation of plasma protein by (EHRLICH), A., ii, 1122.

food-value of (VÖLTZ and BAUDREXEL), A., ii, 215.

utilisation of, in the human body (VÖLTZ and BAUDREXEL), A., ii, 304.

**Yeasts**, assimilation of different carbohydrates by different (LINDNER and SAITO), A., ii, 758.

**Yeast cells**, alteration in the fermentative properties of, after killing by acetone (HERZOG and SALADIN), A., ii, 914.

**Yeast-gum** (v. EULER and FODOR), A., i, 607; (SALKOWSKI), A., i, 825.

behaviour of, in autolysis and fermentation (SALKOWSKI), A., ii, 62.

**Yeast-juice**, hexosephosphoric acid from (YOUNG), A., i, 422.

**Yeast-nucleic acid** (LEVENE and JACOBS), A., i, 96, 510.

**Yohimbine**, effect of, on muscle and nerve (WALLER), A., ii, 138.

**Yttrium**, organic salts of (PRATT and JAMES), A., ii, 893.

**Yttrium earths**, fractionation of (BENNER), A., ii, 285.

**Yttrifluorite** from Norway (VOGT), A., ii, 733.

**Z.**

**Zein**, action of the pancreatic juice on (BAGLIONI), A., ii, 999.

**Zeolites**, constitution of (BASCHIERI), A., ii, 502.

from Hungary (MAURITZ), A., ii, 46.

**Zinc**, spectrum of (PASCHEN), A., ii, 833.

apparatus for demonstrating the action of acids on pure and impure (CASPARI), A., ii, 270.

and manganese, joint influence of, on the development of *Aspergillus niger* (BERTRAND and JAVILLIER), A., ii, 421.

silver and lead, equilibrium in the system (KREMMANN and HOFMEIR), A., ii, 884.

**Zinc alloys** with aluminium (ROSENHAIN and ARCHBUTT), A., ii, 895.

with lead and tin (LEVI-MALVANO and CECCARELLI), A., ii, 1088, 1089.

with mercury, equilibrium of, in relation to the Clark cell (COHEN and VAN GINNEKEN), A., ii, 14.

with nickel (VIGOUROUX and BOURBON), A., ii, 1095.

**Zinc alloys**, with silver and lead, potential of (KREMMANN and HOFMEIER), A., ii, 848.  
 with tellurium (KOBAYASHI), A., ii, 1089.

**Zinc bromide** and chloride, efficiency of, as drying agents (BAXTER and WARREN), A., ii, 268.

chloride, compound of, with aniline (HODGES), A., i, 191.

chromates (GRÖGER), A., ii, 283.

moloxide. See Zinc peroxite.

nitrate, ammonia and water, equilibrium in the system (STASEVITSCH), A., ii, 476.

nitride, presence of, in commercial zinc (MATIGNON), A., ii, 605.

oxide, solubility of, in fused lead silicate and borate (HOLDCROFT), A., ii, 983.

peroxides (KAZANECKY: CARRASCO), A., ii, 282; (TELETOFF), A., ii, 490.

peroxite (*zinc moloxide*; *zinc peroxydate*) (EBLER and KRAUSE), A., ii, 801.

sulphate, precipitation of proteins by (LIPPICH), A., i, 934.

**Zinc organic compounds**, and their use in organic syntheses (BLAISE), A., i, 415.

reaction between, and unsaturated compounds (KOHLER, HERITAGE, and MACLEOD), A., i, 862.

**Zinc organic compounds**, action of the chlorides of  $\alpha$ -alkyloxy-acids on (BLAISE and PICARD), A., i, 175, 260.  
 action of, on ethyl orthoformate (SHDANOVITSCH), A., i, 10.

**Zinc**, precipitation of, as carbonate (SCHIRM), A., ii, 1138.

estimation of, electrolytically (KEMMERER), A., ii, 335.

estimation of, gravimetrically (GRUND), A., ii, 659.

estimation of, volumetrically (KOPENHAGUE), A., ii, 155.

separation and estimation of (PIPEREAUT and VILA), A., ii, 441.

**Zinc blende**, influence of lime on the sulphur content of roasted (PROST), A., ii, 283.

**Zinc minerals** from Kansas, Missouri (ROGERS), A., ii, 900.

**Zirconium**, estimation of (WEDEKIND), A., ii, 774.

*Zygadenus intermedius*, alkaloids from, physiological effects of (MITCHELL and SMITH), A., ii, 911.

analysis of (HEYL and RAIFORD), A., ii, 325.

**Zymase**, extraction and nature of (LEBEDEFF), A., i, 828.  
 extraction of, from yeast (v. LEBEDEFF), A., i, 248; ii, 519; (RINCKLEBEN), A., i, 1054; (KAYSER), A., ii, 421, 640.